

Floodplain and Shoreland Zoning

A Guidebook for Local Officials

Dam Safety, Floodplain and
Shoreland Management
2005 Edition



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CHAPTER 1

INTRODUCTION

Wisconsin is a state rich in natural resources. The name Wisconsin is said to mean “gathering of the waters” and it identifies one of our state’s most bountiful resources - water. Wisconsin has over 50,000 miles of rivers and streams, more than 15,000 inland lakes, over 1,750 square miles of Great Lakes estuaries and bays along 1,017 miles of Great Lakes shoreline, and over 5.3 million acres of wetlands.

In order to help protect these resources as well as human life and property investments, Wisconsin has established a floodplain management program, a shoreland management program, and a shoreland-wetland protection program. These programs are a partnership between the state and local governments that require the adoption of zoning ordinances to regulate development around lakes and streams and in shoreland-wetlands. Standards have been developed for ordinances and are designed to create a balance between private rights and the public interest. The overall goals of the standards are to ensure safe development and to protect land and water resources by focusing on two questions:

1. How can communities reduce flood damages, prevent water pollution and protect fish and wildlife habitat in areas with existing development?; and
2. How can future development be guided to prevent damage to both the man-made and natural environments?

The floodplain management, shoreland management and the shoreland-wetland protection programs all strive to meet the overarching goals of the developed ordinance standards by focusing on different aspects of the two questions. For the floodplain management program, the goals are:

- to protect life, health and property;
- to minimize costs for flood control projects;
- to reduce tax dollars spent for rescue, relief and repair of flood damage;
- to shorten business interruptions caused by flooding;
- to prevent future flood blight areas;
- to discourage victimization of unwary land and home buyers; and
- to prevent increased flood levels caused by unwise floodplain development.

For the shoreland management and shoreland-wetland protection programs, the goals are:

- to maintain safe and healthful conditions for the enjoyment of recreation;
- to prevent and control water pollution;
- to protect spawning grounds, fish and aquatic life;
- to protect wildlife habitat;
- to control building sites, placement of structures and land uses to preserve shore cover and natural beauty; and
- to maintain the economic value of water resources.

In response to the ever increasing pressure on Wisconsin's waters and adjacent lands, these goals have been written into the state laws that create the floodplain management and shoreland management and shoreland-wetland protection programs.

Wisconsin was one of the first states in the nation to enact laws giving local units of government zoning authority. The City of Milwaukee was granted limited zoning powers in 1889, and zoning powers were extended to other cities in 1907 and to villages in 1917. Wisconsin was the first state to authorize the use of zoning in rural areas when counties were granted zoning authority in 1923.

While the first zoning ordinances focused on protecting public health and property values, the recognition of broader public interests in zoning ordinances soon followed. In 1935, the impacts of shoreland development were first raised in Wisconsin and counties were given the authority to regulate land along natural watercourses to restrict industrial development in river valleys and to preserve shorelands for future parks.

In June 1966, the Wisconsin Legislature approved a broad pollution abatement and prevention program, the Water Resources Act. This act expanded the state's role in protecting water resources by strengthening and reorganizing the state's regulatory, planning, and information gathering functions. The act gave the Department of Resource Development (now the Department of Natural Resources [DNR]) general supervision and control over Wisconsin's waters.

The Water Resources Act created a comprehensive program for managing water and land resources in Wisconsin. Among other things, it established a statewide shoreland zoning program to protect lakes and streams from adverse impacts caused by adjacent land uses and required counties to adopt shoreland zoning ordinances by January 1, 1968. The act also required counties, cities and villages to adopt floodplain zoning ordinances by the same date.

The Water Resource Act was partly in response to proposed federal legislation designed to mitigate flood-related damages. In 1968, Congress passed the National Flood Insurance Act which created the National Flood Insurance Program (NFIP). The federal legislation mandated that states take a proactive approach in regulating land uses in areas affected by flooding and required landowners in flood-susceptible areas to purchase flood insurance. At this same time, Wisconsin and the nation were also concerned with finding ways to prevent and correct water pollution.

By 1971, every county, except Milwaukee (which has no unincorporated areas), had adopted and was administering shoreland zoning ordinances. However, the shoreland program did not initially require the regulations of wetlands. Counties could choose to include, or not include wetland conservancy districts in their respective ordinances. Prior to 1980, 54 out of 72 counties had included conservancy district zoning in their shoreland zoning ordinances to help protect wetlands.

In 1978, the Wisconsin Wetland Inventory was established at the DNR to produce maps identifying wetland resources. In 1980 the shoreland program added provisions for the protection

of shoreland-wetlands in unincorporated areas and created the shoreland-wetland protection program for cities and villages.

Today over 500 communities in Wisconsin have adopted floodplain zoning ordinances. Every county, except Milwaukee, has adopted a shoreland zoning ordinance and over 430 communities have adopted shoreland-wetland zoning ordinances.

This guidebook is intended to provide local zoning officials with the background and rationale of these programs. It is not a “how-to” guide for general zoning administration. Instead, it focuses specifically on floodplain management, shoreland management, and shoreland-wetland protection. Each chapter is designed to assist local staff in the adoption, administration and enforcement of these programs.



“When disaster strikes, the opportunity to prepare has passed.”

-Dan McCormick

A Brief History of Floodplain and Shoreland Zoning in Wisconsin

- 1966** Wisconsin enacts Water Resources Act (Chapter 614, Laws of 1965; 1965-1966 Legislative Session).

Shoreland zoning by counties was authorized and all counties were directed by the legislature to zone by ordinance "all shorelands in [the] unincorporated area" by January 1, 1968 (s. 59.971, Wisconsin Statutes; now numbered s. 59.692. Wis. Stats.).

Floodplain zoning required by the legislature for all counties, cities and villages within one year of obtaining adequate information (s. 87.30, Wis. Stats.).

- 1968** Congress passes the National Flood Insurance Act to correct some of the short comings of traditional flood control and flood relief programs. Created the National Flood Insurance Program.

Chapter RD 15 (later Chapter NR 115), Wisconsin Administrative Code, Shoreland Management Program becomes effective.

- 1970** Chapter NR 116, Wis. Admin. Code, Floodplain Management Program becomes effective.

- 1972** The Public Trust Doctrine was reaffirmed when Wisconsin's Supreme Court upheld the validity of Marinette County's Shoreland Zoning ordinance in an action alleging a taking of private property. The Court found that "a conservancy district is required by the statutory minimum standards." (*Just v. Marinette*, 56 Wis.2d 7, 201 N.W.2d 761 1972). By 1971, many counties had adopted shoreland zoning ordinances which referenced USGS maps to designate wetlands comprising a conservancy district.

- 1973** Congress passes the Flood Disaster Protection Act requiring flood insurance for structures in identified flood hazard areas as a requirement of federally backed loans.

- 1977** The Wisconsin Wetland Inventory was authorized to produce maps identifying wetland resources (s. 23.32, Wis. Stats.).

Chapter NR 116, Wis. Admin. Code, was revised.

- 1978** A petition by Wisconsin's Public Intervenor on behalf of a number of environmental organizations and individuals asked the Natural Resources Board to adopt by rule a statewide wetlands activity permitting program to regulate all wetlands or, as an alternative, to fully implement statutory authority to protect shoreland wetlands (under s. 144.26, Wis. Stats.; now numbered s. 281.31, Wis. Stats.).

The Natural Resources Board wetland protection policy (s. NR 1.95, Wis. Admin. Code) was adopted directing the Department of Natural Resources to maximize wetland protection under its existing authority.

- 1979** An opinion of Wisconsin's Attorney General concluded that extensive authority to regulate wetlands granted in s. 144.26, Wis. Stats., (the enabling statute for shoreland zoning), and in other law was not then exercised to its fullest extent (Opinion 85-79 and correspondence to DNR Secretary of 5/20/80).

Congress moves the National Flood Insurance Program and the Flood Insurance Administration to the newly created Federal Emergency Management Agency.

- 1980** Minimum standards for zoning shoreland wetlands in unincorporated areas were established by administrative rule adopted by the Natural Resources Board and reviewed by the Joint Committee of the Legislature for Review of Administrative Rules (ch. NR 115, Wis. Admin. Code).
- 1981** The Legislature passes a law that directs cities and villages to zone shoreland wetlands in incorporated areas. The intent of the Legislature clearly was to require cities and villages to protect shoreland wetlands within incorporated areas to the same extent as the protection afforded to wetlands in unincorporated areas by county shoreland zoning. Statutes requiring protection of shoreland wetlands in cities and villages recognize a linkage with the wetland mapping program authorization, s. 23.32, Wis. Stats. and rely on that statute for a definition of “wetlands” and on the maps to designate regulated wetlands (ss. 61.351 and 62.231, Wis. Stats., and ch. NR 117, Wis. Admin. Code).
- 1985** Regulation of shoreland wetlands reaffirmed by correspondence of Wisconsin’s Attorney General which concluded that the provisions of ch. NR 115, Wis. Admin. Code, are “duly authorized.”
- Chapter NR 116, Wis. Admin. Code, revised with changes made to sections relating to flood study standards and zoning below dams.
- 1987** The Public Trust Doctrine reaffirmed by the State Supreme Court in the *Marshall and Illsley Bank v. Town of Somers* decision, 141 Wis.2d 271, 414 N.W.2d 824 (1987).
- 1994** Congress passes the National Flood Insurance Reform Act authorizing the Community Rating System, increasing the maximum amount of flood insurance coverage and establishing a mitigation grant program.
- Marris v. City of Cedarburg*, 176 Wis.2d 14, 498 N.W.2d 842 (1993), the Wisconsin Supreme Court provides guidelines to distinguish “structural repairs” from “non-structural repairs” in applying a 50% rule.
- 1998** *State v. Kenosha County Board of Adjustment*, 218 Wis.2d 396, 577 N.W.2d 813 (1998), the Wisconsin Supreme Court defines “unnecessary hardship” when considering use variances in a case of a new deck proposed in the shoreland setback area.
- 2001** *State v. Outagamie County Board of Adjustment*, 251 Wis.2d 484, 628 N.W.2d 736 (2001), the Wisconsin Supreme Court invalidates s. NR 116.13 (2), Wis. Admin. Code, due to conflicts with ss. 59.694 (7) and 87.30 (1g), Wis. Stats., because it prohibits all variances for residential floors below the regional flood elevation.
- 2004** Chapter NR 116, Wis. Admin. Code revised allowing floodproofing costs to be excluded from the 50% cap and redefining the requirements for decks in floodplain areas.
- Two Wisconsin Supreme Court decisions were issues that distinguished between “use variances” and “area variances” and redefined “unnecessary hardship” as it applies to area variances. *Ziervogel v. Washing County Board of Adjustment*, 2004 WI 23, 269 Wis.2d 549, 676 N.W.2d 401, and *State v. Waushara County Board of Adjustment*, 2004 WI 56, 271 Wis.2d 547, 679 N.W.2d 514.



CHAPTER 2

FLOODPLAIN ZONING

[Note: Floodplain management has certain acronyms and terms which are specific to it. Brief definitions of these acronyms and terms will be given in the text. More detailed definitions may be found in Appendix A.]

Floods are the nation's and Wisconsin's most common natural disaster. In 1968, Congress passed the National Flood Insurance Act and created the National Flood Insurance Program (NFIP) to correct some of the shortcomings of existing flood control and flood relief programs. In 1979, the NFIP was transferred to the newly created Federal Emergency Management Agency (FEMA). In the nearly 40 years since the NFIP was created, it has expanded to include nearly 20,000 communities. In Wisconsin, over 500 communities participate.

The state of Wisconsin recognized early the costs associated with flooding. Wisconsin's floodplain management program dates back to the Water Resources Act of 1966, which required communities to zone their flood prone areas to protect people and property. Under section 87.30 of the Wisconsin Statutes, communities must adopt a floodplain zoning ordinance within one year of receiving adequate hydraulic and engineering data. All ordinances must meet both state and federal minimum standards which can be found in chapter NR 116, Wisconsin Administrative Code and 44 CFR 60.3 (Code of Federal Regulations).

Floodplain zoning is an important tool to protect human life, health, and property. By establishing floodplain zoning ordinances, communities can minimize the risks and costs associated with unwise floodplain development. The primary goals of floodplain management in Wisconsin are:

- to protect life, health and property;
- to minimize costs for flood control projects;
- to reduce tax dollars spent for rescue, relief and repair of flood damage;
- to shorten business interruptions caused by flooding;
- to prevent future flood blight areas;
- to discourage victimization of unwary land and home buyers; and
- to prevent increased flood levels caused by unwise floodplain development.

The amount of physical damage caused by and the direct monetary costs of flooding for the state of Wisconsin have been increasing over the past three decades. Since 1974, a total of 4,339 flood insurance claims totaling over \$27,000,000 have been filed in Wisconsin. However, this represents only a portion of the losses suffered as it is estimated that only 10-15% of the structures at risk are covered by flood insurance. The Wisconsin State Hazard Mitigation Plan has estimated the total future flood risk for residential structures alone is nearly \$5.5 billion.

Flooding also has associated indirect or non-monetary costs. The greatest of these costs is the lives lost by either residents unable to get out of harm's way or emergency personnel attempting

rescues. Some of the direct and indirect costs of flooding are listed in Table 2.1 *Direct-Indirect Costs of Flooding*.

Direct Costs	Indirect Costs
Rescue and Relief Efforts	Business Interruptions (lost wages, sales, production)
Clean-up Operations	Construction and Operation of Flood Control Structures
Rebuilding Public Utilities and Facilities	Cost of Loans for Reconstructing Damaged Facilities
Rebuilding Uninsured Homes and Businesses	Declining Tax Base in Flood Blight Areas
Temporary Housing Costs for Flood Victims	Subsidies for Flood Insurance

Table 2.1 Direct-Indirect Costs of Flooding

Communities not participating in the NFIP are subject to certain restrictions. If a non-participating community has identified floodprone areas, federal financial assistance such as a VA loan or a mortgage from a federally regulated or insured bank will not be available. Also, the community will not be eligible for federal assistance if a federally declared flooding disaster occurs; no direct federally insured loans or grants will be available; and no structures will be eligible for flood insurance.

Floodplain zoning applies to counties, cities and villages. Section 87.30, Wis. Stats., requires that each county, village and city shall zone, by ordinance, all lands subject to flooding. Chapter NR 116, Wis. Admin. Code requires all communities to adopt reasonable and effective floodplain zoning ordinances within their respective jurisdictions to regulate all floodplains where serious flood damage may occur within one year after hydraulic and engineering data adequate to formulate the ordinance becomes available.

The purpose of a local floodplain zoning ordinance is to protect life, health and property, minimize the financial costs associated with flooding, protect land and home buyers and prevent future flood damages caused by unwise floodplain development. Two important concepts are used to establish the basis for floodplain zoning:

- Jurisdiction - where are floods a hazard and where do zoning regulations apply; and
- Standards - what must regulations cover in order to provide protection.

In order to determine what lands are at risk of flooding and to clearly establish where protective regulations apply, data must be gathered, analyzed and then transferred to maps. Standards are then developed in order to ensure a fair and equitable process for regulating use and development within those areas determined to be at risk to floods. Regulatory oversight for the flood risk determination process and the development of standards is found in ch. NR 116, Wis. Admin.

Code, Wisconsin's Floodplain Management Program and 44 CFR Part 60.3, Floodplain management criteria for floodprone areas.

2.10 JURISDICTION

A flood is defined as a general and temporary condition of partial or complete inundation of normally dry land areas. The area inundated during a flood event is called the floodplain. The floodplain includes the floodway, the floodfringe, and other flood-affected areas. The floodway is the channel of a river and the adjoining land needed to carry the 100-year flood discharge. Because the floodway is characterized by rapidly moving and treacherous water, development is severely restricted in a floodway. The floodfringe, which is landward of the floodway, stores excess floodwater until it can be infiltrated or discharged back into the channel. During a regional flood event, also known as the 100-year, one-percent, or base flood, the entire floodplain or Special Flood Hazard Area (SFHA) is inundated to a height called the regional flood elevation (RFE). When depicted on a Flood Insurance Rate Map (FIRM), the RFE is equivalent to the NFIP's base flood elevation (BFE) as defined in 44 CFR 59.1.

Floodplain zoning is based on maps either produced by or approved by the Wisconsin Department of Natural Resources (DNR) [s. NR 116.07(1), Wis. Admin. Code] or FEMA [44 CFR Part 65.1]. These maps are community specific and have different names based on the data depicted and the methodology used to develop them.

Flood Hazard Boundary Maps (FHBM) are based on approximate studies and do not include the floodway or RFEs. Flood Boundary Floodway Maps (FBFW) are companion maps to the FHBM and depict the floodway. FIRMs are based on detailed studies, include determined base flood elevations and depict both the floodway and the flood fringe on one map. The data from the detailed studies done to produce the FIRMs can be found in the Flood Insurance Study (FIS).

The mapped floodplains are then divided into two primary areas, the floodway and the flood fringe. These two general floodprone areas are further divided into areas of risk primarily for insurance rating purposes. An explanation of these zones can be found in Table 2.2 *Flood Zones*.

In Wisconsin, a state specific flood zone, the Flood Storage District (FSD), has been developed. The district delineates that portion of the floodplain where storage of floodwaters has been taken into account and is relied upon to reduce the regional flood discharge through the protection of storage areas.

It is not used by FEMA for insurance rating purposes and does not appear on the flood maps published by FEMA. Adoption of an additional map delineating the FSD may be required by the DNR and approved by both DNR and FEMA.



Figure 2.1 Unprotected structures in floodplain

On maps produced prior to the 1990's, the floodway and flood fringe are placed on separate maps (FHBM and FBFW). The floodway is shown as a white area adjacent to and including the stream channel. On later maps, the floodway is shown as a shaded area with diagonal hatching on the same map as the flood fringe. The flood fringe is shown as a shaded area and is divided into several zones primarily for insurance rating purposes. Figure 2.2 is an example of a newer FIRM.

Copies of a community's floodplain maps and studies may be obtained from FEMA by local officials at no charge. Contact information may be found in Appendix C.

A. Engineering and Mapping

Floodplain zoning is based on a map that is typically produced by or approved by either DNR or FEMA. Many different techniques can be used to map floodplains. These include approximate

Flood Zones	
Zone A	<p>The 100 year or base floodplain. Riverine. There are six types of A Zones:</p> <p>A The base floodplain mapped by approximate methods, i.e., BFEs are not determined. This is often called an unnumbered A Zone or an approximate A Zone.</p> <p>A1-30 These are known as numbered A Zones (e.g., A7 or A14). This is the base floodplain where the FIRM shows a BFE (old format).</p> <p>AE The base floodplain where base flood elevations are provided. AE Zones are now used on new format FIRMs instead of A1-30 Zones.</p> <p>A0 The base floodplain with sheet flow, ponding, or shallow flooding. Base flood depths (feet above ground) are provided.</p> <p>AH Shallow flooding base floodplain. BFEs are provided.</p>
Zone V	<p>The 100 year or base floodplain. Coastal.</p> <p>V The coastal area subject to velocity hazard (wave action) where BFEs are not determined on the FIRM.</p> <p>VE The coastal area subject to velocity hazard (wave action) where BFEs are provided on the FIRM.</p>
Zone B and Zone X (shaded)	<p>Area of moderate flood hazard, usually the area between the limits of the 100-year and 500-year floods. B Zones are also used to designate base floodplains of lesser hazards, such as areas protected by levees from the 100-year flood, or shallow flooding areas with average depths of less than one foot or drainage areas less than one square mile.</p>
Zone C and Zone X (unshaded)	<p>Area of minimal flood hazard, usually depicted on FIRMs as above the 500-year flood level. Zone C may have ponding and local drainage problems that do not warrant a detailed study or designation as base floodplain. Zone X is the area determined to be outside the 500-year floodplain and if applicable, protected by levee from the 100-year flood.</p>

Table 2.2 Flood Zones

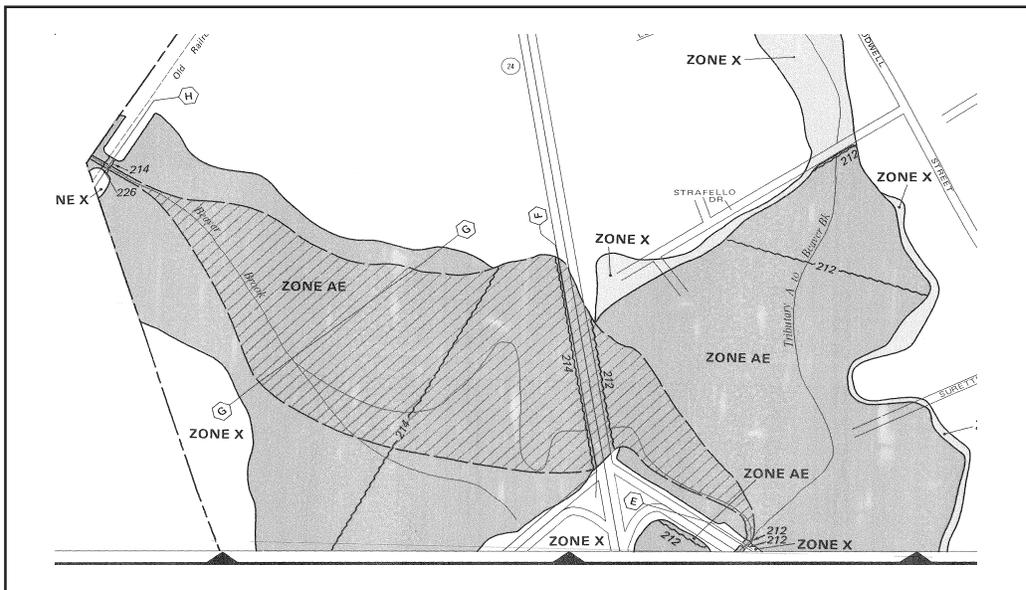


Figure 2.2 Flood Insurance Rate Map

methods such as the analysis of soils, vegetation, topography, and floods of record, as well as detailed hydraulic and hydrologic investigations. For regulating floodplain development, a map developed through hydrologic and hydraulic analysis is preferred. Standards for hydrologic and hydraulic studies are found in s. NR 116.07, Wis. Admin. Code.

Communities considering revisions to their adopted floodplain map must submit the proposed revisions to both DNR and FEMA for review and approval. The DNR reviews all maps related to flooding and approves those developing detailed studies for approximate A Zones. The DNR also approves those maps depicting floodprone areas not identified by FEMA. Approval by DNR and FEMA is required for any map change related to the relocation of a stream channel, changes in BFE, alteration of floodway lines or removal of an area from the floodway or the floodfringe based on a BFE from a FIRM.

Approximate Study Method: Approximate study methods delineate floodplains based on the best available data. Soils mapping, high water profiles, aerial photographs of previous floods, and historic high water marks are methods used to outline potential flood hazard areas. Topographic information used in conjunction with soils maps and aerial photos show low areas adjacent to the channel, obvious bluffs, and man-made restrictions such as highways and railroad grades. The aerial photographs help distinguish floodplains by vegetation differences or delineation of permanent marsh areas (also shown on wetland maps).

Approximate methods do not result in defined RFEs or floodways. The SFHA will be shown as “unnumbered A Zones” on the FIRM and “approximate 100-year flood zones” on the FBFW map. The development of RFEs in unnumbered A Zones is discussed further in Section 2.10 B, Case-by-Case Analysis, later in this chapter.

Detailed Study Method: Detailed study methods use mathematical analysis of streamflow and precipitation records as well as topographic features to delineate floodplains. Hydrologic analysis is used to determine the amount of water (run off) flowing through the floodplain for a flood event of a given frequency. Gauge data, streamflow records including the flood of record, and

generalized basin characteristics are techniques that can be used to estimate flood flows. Information on channel and floodplain configurations, manmade and natural obstructions, and resistance to flow are also collected. Hydrologic modeling establishes peak flood flows at significant locations within a watershed.

Once the peak flow is obtained, hydraulic analysis is used to determine how the stream channel and adjacent lands will carry the flow and to predict flood height, width and velocity. Models, based on flow rates over time, are used to determine the extent and velocity of the flood and include steady state models, unsteady flow models, and dynamic models. Additional information can be found in the DNR's Flood Hydrology and Hydraulics Manual.

Detailed methods result in defined RFEs and floodways. The SFHA is shown on the FIRM as either numbered A Zones and B Zones or as AE and X Zones.

Flood Insurance Studies: The data gathered through either an approximate or detailed study is presented by FEMA in a Flood Insurance Study (FIS). The FIS includes background information on the community, reviews the engineering methods used, and discusses how the flood map was prepared from the data for floodplain management purposes. Data on discharge rates and floodways are presented in tabular form and in charts called flood profiles. While this information is not necessary for the administration of a local floodplain ordinance, it is very important in making subsequent calculations of flood elevations as part of future hydraulic engineering studies.

The FIS text will sometimes identify the methodology used for delineating approximate floodplain boundaries. Local officials attempting to identify a project location using approximate studies may wish to use the following sources where available:

- **Soils Mapping** - Lands subject to periodic flooding and certain soil types exhibit a close correlation. The Natural Resources Conservation Service (formerly the Soil Conservation Service) has Soil Surveys available.
- **Historic High Water Levels** - Newspaper reports, local records, and personal accounts can be used to accurately determine areas inundated by previous floods. They should be corroborated by physical evidence such as ice scars on trees or buildings. Another source of historic floods is the U. S. Army Corps of Engineers' Water Surface Profiles. These profiles show flood elevations of river reaches for one or more flood events.
- **Hydrologic Reports** - Hydrologic reports including stormwater management plans, watershed management plans, and flood control reports prepared by consultants and other agencies may contain flood data for selected streams and rivers that can be used for regulatory purposes. These reports are not necessarily related to the NFIP.
- **Bridge Data** - Hydrologic and hydraulic investigation are usually performed for new or replacement bridges and culverts. Bridge plans often include 50- and 100-year flood discharges and elevation data for the area immediately adjacent to the bridge. The Department of Transportation (DOT) inventories this data for bridges throughout the state.

Flood Insurance Maps: The engineering and mapping data developed through either approximate or detailed studies is used to develop flood elevations for various frequency floods (10, 50, 100 or 500-year) and to determine floodway and flood fringe boundaries. The floodway and flood fringe are then plotted on the floodplain maps. The maps also show flood elevations and widths and insurance rating zones. These floodplain maps are used to rate flood insurance policies and form the basis of local floodplain ordinances. Under current state and federal regulations, maps may be produced by sources other than FEMA, but all maps used for floodplain zoning management must be reviewed and approved by either the DNR or FEMA prior to local adoption.

The type of flood maps effective in the state varies. The specific maps are the Flood Hazard Boundary Maps (FHBM) which are based on approximate studies and do not include the floodway or RFEs. Flood Boundary Floodway Maps (FBFW) are companion maps to the FHBM and depict the floodway. Flood Insurance Rate Maps (FIRM) are based on detailed studies, include determined base flood elevations and depict both the floodway and the flood fringe on one map. Sections of the state are now being re-mapped as Digital Flood Insurance Rate Maps (DFIRMs). Flood maps may be viewed or ordered on-line from FEMA's Map Store at <http://www.fema.gov>.

Special Mapping Cases: Despite state and federal efforts to make all studies uniform, there are some special mapping cases such as lakes, dams, coastal areas, and areas of shallow flooding.

Lakes. For lakes, the technique for determining the RFE depends on hydraulic characteristics. Lakes in Wisconsin can be generally placed in one of three groups:

- surface water drainage;
- surface water flow through; or
- groundwater flow through.

Surface water drainage lakes are fed primarily by groundwater inflow and direct precipitation. These lakes generally have either a small inflow stream or no inflow stream, but do have a definite outlet. They are easily analyzed for determining the RFE since the outlet elevation determines the highest resultant elevation in the lake due to short-term precipitation inflow.

Surface water flow through lakes have both an inlet and an outlet. The technique for determining the RFE on these lakes is identical to the methodology for rivers and streams.

Groundwater flow through lakes are those fed by direct precipitation and groundwater and do not have an inlet or an outlet. Determining the RFE on these lakes is the most difficult because of yearly fluctuations in the lake level. The fluctuations are largely dependent on the groundwater table surrounding the lake. Determining the RFE on groundwater lakes can be done using two different techniques depending on the historical



Figure 2.3 Lake

information available. These techniques are:

- statistical analysis based on a long-term record; and
- the higher of either the historic maximum elevation (if documented) or the current lake level plus the regional rainfall/runoff from the upper watershed.

Data for lakes studied by detailed methods are displayed differently on the flood maps and in the FIS text than stream data. On the FIRM, the 100-year flood elevation for lakes is shown directly below the flood insurance zone designation, rounded to the nearest whole foot. On the FBFW, the floodplain for a detailed study lake is usually not divided into floodway and floodfringe districts. The exception may occur if the lake is actually a wide point in a river. In this situation, the lake may have a designated floodway. There will not be a flood profile or floodway data table entry for lake data. Instead, a Table of Lake Elevations is included in the FIS text. The table will contain flood elevation data for various frequency floods for all lakes studied by detailed methods for that community.

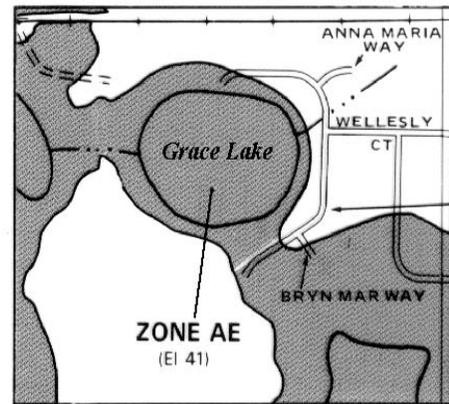


Figure 2.4 Lake FIRM

Dams. Under s. NR 116.09 (1) (b) 5, Wis. Admin. Code, for developed and undeveloped areas downstream of dams, the floodway and floodfringe districts are based on one of three conditions:

- assuming the dam is in place;
- assuming the dam is not in place; and
- assuming failure of the dam during the regional flood.

The dam owner is responsible for developing the dam failure analysis, mapping and profiles which in turn must be adopted by the community in order to prevent inappropriate development in the hazard area downstream of the dam. The profile to be adopted will depend on existing development in the area downstream of the dam and the design capacity of the dam.

The DNR will advise the community on which mapping condition needs to be incorporated into the ordinance. The map and profile must then be adopted, by reference, into the local floodplain zoning ordinance. When determining the floodplain elevation for a location with multiple map references (i.e. floodplain and dam failure analysis) the most restrictive elevation must be used.

Dam failure analysis maps do not become part of a community's FIS or FIRM. Also, FEMA approval is not required. These maps are an overlay to a community's FIRM and should be used to ensure development does not occur in high risk areas

Levees. Under s. NR 116.09 (1) (b) 6, Wis. Admin. Code, where a levee meets standards for design and maintenance, two conditions are analyzed and two flood profiles are prepared. These two conditions include areas with and without a levee.

Coastal Areas. Sections of the state along the coastlines of Lake Michigan and Lake Superior are subject to both flooding and wave action. If the wave heights in these areas are determined to be three feet or more, then the areas are designated as V Zones on the FIRM. Section NR 116.07 (4) (k), Wis. Admin. Code, requires that the standards used to determine the RFE for all communities adjacent to the Great Lakes shall be those specified in FEMA’s publication Guidelines and Specifications for Flood Hazard Mapping Partners, FEMA, 4/2003, Appendix D, Guidance for Coastal Flooding Analysis.

Areas of Shallow Flooding. Areas of shallow flooding are defined as those areas where the maximum depth of flooding during the regional flood does not exceed one foot in depth and does not exceed six hours in duration. Shallow flooding occurs in areas where a lack of channels means water cannot drain away easily. A synthetic hydrograph as described in s. NR 116.07, Wis. Admin. Code, must be developed for the watershed and routed through the area in order to determine the RFE in some cases. The RFE in this case is not stated in relation to mean sea level (MSL) or the National Geodetic Vertical Datum (NGVD). Rather, it is stated as a height relative to the existing ground level such as “Zone A0 (Depth 1’)”.

B. Map Interpretation

The floodplain map forms the basis for floodplain zoning and the floodplain zoning ordinance. Zoning staff should first consult the DNR- and FEMA-approved floodplain zoning map when interpreting the floodplain ordinance. A tutorial on how to read a FIRM may be found on the FEMA website: www.fema.gov/fhm/ot_main.shtm.

To find floodplain boundaries using approximate studies, use the steps illustrated in Table 2.3 *Locating a Project on a Floodplain Map* below. If a project site is clearly out of the SFHA, then no floodplain regulations apply, but the project should be reviewed for other considerations. However, if it cannot be easily determined whether or not the property is in or out of the SFHA, the local official should request the applicant to provide an engineering analysis as discussed in Case-by-Case Analysis below. In these cases, the applicant may need to hire a private engineering firm to make the determination.

If a more exact determination of the SFHA boundary is needed, the hydraulic model from the original flood study should be reviewed. Assistance in using this information is available from the DNR.

Locating a Project on a Floodplain Map	
Step 1: Find the correct map panel by using the map index.	Step 4: Locate the property on the map using landmarks such as roads.
Step 2: Locate the property on the index using landmarks such as roads.	Step 5: Determine scale.
Step 3: Locate the map panel number for the area around the property using the most recent FBFW map or the most recent FIRM panel.	Step 6: Measure the distance from the SFHA boundary to the property boundaries or proposed development site.

Table 2.3 Locating a Project on a Floodplain Map

Case-by-Case Analysis: A case-by-case analysis is necessary if a proposed building site is determined to be within an unnumbered A Zone (approximate study area). Unnumbered A Zones have not had a detailed engineering study completed and do not have a determined RFE. Therefore, prior to issuing any land use permits in an unnumbered A Zone, the local zoning official must follow a technical study process (case-by-case engineering analysis) to determine an RFE for the property. Communities may require the developer to perform the analysis. Once the analysis is completed, it must be submitted to the DNR for review and approval. All approved case-by-case analyses must be filed with FEMA and the local community. Standards for hydrologic and hydraulic studies may be found in s. NR 116.07, Wis. Admin. Code.

Exceptions may be allowed for structures that meet zoning district standards and do not change existing grade after careful evaluation. These exceptions are:

- shore protection projects constructed in conformance with DNR guidance;
- routine maintenance to existing streets, driveways, or parking lots where elevation and grade are unchanged;
- enlargements or ponds where the spoil material will be removed from the floodplain or spread out thinly over the ground surface so as not to change the cross section;
- park shelters associated with a recreational use that have no walls; and
- buried utilities where no earth cover rises above the original grade.

If an analysis is required then it must indicate if the project is in the floodplain, if it is in the floodway and if so, what the revised RFE will be. The analysis must also state what the lowest floor elevation should be as well as the elevation at the top of the fill. All survey data and computations leading to these conclusions must accompany the findings. Based on the data provided, DNR will confirm the proposed RFE and determine whether or not a map amendment will be necessary. Any and all map and floodplain zoning ordinance amendments must be reviewed and approved by both the DNR and FEMA if FEMA-approved floodplain boundaries or elevations are to be changed.



Figure 2.5 Unwallled park shelter

2.20 ZONING STANDARDS

Floodplain ordinances regulate the land use, site design, and structural design of structures and other development including bridges, roads and culverts. They also specify jurisdiction (where the regulations apply); procedures for processing and reviewing permits, amendments and appeals; public notification and penalties imposed for violations. All ordinances must meet or exceed federal and state standards for maps and data used, types of land uses permitted, structural requirements, procedures, and penalties.

The NFIP is based on the standards outlined in 44 CFR 60.3. The NFIP standards are minimum standards for floodplain management. States may impose more restrictive standards. However, any community wishing to participate in the NFIP must have an ordinance which meets the minimum federal standards. The Wisconsin DNR has developed a model ordinance

which incorporates all the applicable state and federal standards. A copy of the model ordinance can be found in Appendix E of this Guidebook or downloaded from the DNR website: <http://www.dnr.state.wi.us/org/water/wm/dsfm/flood/communities.htm>.

The purpose of floodplain zoning as outlined in s. NR 116.01 (2), Wis. Admin. Code is to:

- protect life, health and property;
- minimize expenditure of public monies for costly flood control projects;
- minimize rescue and relief efforts, generally undertaken at the expense of the general public;
- minimize business interruptions;
- minimize damage to public facilities such as water mains, sewer lines, streets and bridges;
- minimize the occurrence of future flood blight areas;
- discourage the victimization of unwary land and home buyers; and
- prevent increases in the regional flood from occurring which will increase flood damage and may result in conflict and litigation between landowners.

All communities are required to adopt, administer and enforce floodplain zoning ordinances under s. 87.30, Wis. Stats. and s. NR 116.05, Wis. Admin. Code. The ordinances adopted must meet or exceed the standards outlined in ch. NR 116, Wis. Admin. Code and in 44 CFR 60.3. Communities are also required to develop floodplain zoning maps as defined in s. NR 116.06, Wis. Admin. Code. The minimum limits of the regulated area are all those areas covered by water during the regional flood.

Communities must appoint appropriate boards and staff as well as develop policies and procedures to administer the floodplain zoning ordinance. The appointment of these boards and staff is already required under ss. 59.69, 59.692, and 62.23 (7), Wis. Stats., however the duties under ch. NR 116, Wis. Admin. Code, are more specific to floodplain management.

The duties of the zoning administrator, zoning agency and the Board of Adjustment or Appeals are outlined in s. NR 116.19, Wis. Admin. Code. The zoning administrator is required to advise the public on the provisions of the ordinance, issue permits, inspect properties for compliance, keep the official records and investigate reported violations. Permits are required for all structures and other development including bridges roads and culverts. The zoning agency is required to oversee the zoning administrator, review and act upon all proposed amendments to the floodplain zoning ordinance and maintain a complete public record of its proceedings. The board of adjustment or appeals is required to hear and decide appeals to decisions made by the zoning administrator, hear and decide requests for special exceptions or conditional uses to the terms of the floodplain ordinance, and maintain a public record of its proceedings.

Monitoring development in the floodplain is imperative to successful floodplain management, therefore the maintenance of zoning records is particularly important for floodplain zoning. In addition to the usual record of permits and inspections, the zoning administrator must maintain copies of the following items:

- all floodplain permits with the RFE and lowest floor elevation on them;

- all profiles, maps, ordinances, and amendments related to floodplain zoning;
- nonconforming buildings and uses in the floodplain, including all modifications, additions, and repairs;
- appeals and variance case files involving floodplain properties;
- copies of all case-by-case analysis of floodplain developments; and
- all damage inspection reports of floodplain properties.

The duties of a community regarding floodplain management are outlined in s. NR 116.20, Wis. Admin. Code. They relate to defining the jurisdiction; administrative procedures for the issuance of permits, special exceptions, conditional uses, variances, appeals, and amendments; and enforcement of the floodplain zoning ordinance. The section also discusses the need to issue certificates of compliance and the provision of floodplain information to the public.

Areas annexed by cities and villages remain under county zoning maps and provisions administered by the city or village until they formally adopt a revised map and ordinance. For lands that are subject to a county ordinance, s. 59.69 (7), Wis. Stats., provides that whenever such an area petitions to become part of a city or village, the regulations imposed by the county ordinance shall continue in effect, without change, and shall be enforced by the city or village until the regulations have been changed by official action of the governing body of the city or village. These provisions would apply to lands that had been subject to a county floodplain zoning ordinance and were subsequently the subject of an annexation petition.

2.21 FLOODPLAIN DISTRICTS

Most floodplain zoning ordinances contain three districts: floodway; floodfringe; and general floodplain. Some communities may have special flood problems and may elect to create other floodplain districts such as: shallow depth flooding; flood storage; coastal floodplain; and floodplain islands. Table 2.2 *Flood Zones* lists the zone designations as they are found on the floodmaps.

Except for water-dependent structures (piers, wharves, etc.) and some open-space uses such as recreational facilities, all new development is prohibited in the floodway. In the floodfringe, most development is allowed provided that elevation and dry-land access requirements are met. In the general floodplain, no development may be permitted until a floodway/floodfringe determination is completed. In a flood storage area, one-for-one compensatory storage must be provided for any storage lost.

Each of the districts allows for the continuation of nonconforming structures and uses with certain limitations. Amendments and variances are also allowed.

A. Floodway

The floodway is the channel of a river or stream and those portions of the adjoining floodplain needed to carry the regional flood as shown on Figure 2.6. The width of the floodway is determined through detailed engineering analysis. Floodwaters are generally deepest and swiftest in the floodway, and anything in this area is in the greatest danger during a flood. Also, encroachment by development will potentially increase flood elevations significantly and worsen flood conditions. Because of these factors, development in the floodway is strictly controlled.

Standards: Development standards for the floodway are detailed in s. NR 116.12, Wis. Admin. Code. Generally, development in the floodway is restricted to those uses which will not cause an obstruction to flood flows, increase the regional flood discharge or adversely affect existing drainage courses or facilities. Most new structures, wells, septic systems and solid or hazardous waste disposal and storage facilities are strictly prohibited. A listing of prohibited and permitted uses in the floodway can be found in Table 2.4 *Uses of the Floodway*.

Permitted development must be reviewed prior to issuance of permits to determine if it will cause an increase in the RFE using the standards outlined in s. NR 116.07, Wis. Admin. Code.

Any permitted development in the floodway can not increase the RFE 0.01 foot or more by either obstructing flood flows or reducing flood storage. If a project causes an increase in the RFE of more than 0.01 foot, the permit application must be denied. However, applicants may petition for an amendment to the ordinance for such projects.

If the increase in the RFE extends off the applicant's property, legal arrangements must be made with the affected property owners prior to approval of the amendment and any subsequent permits. The legal arrangements made may include, but are not limited to, flowage easements or purchase of the property. Any flowage easement must adequately describe the area that will be flowed.

Campgrounds: Campgrounds are allowed in the floodway under s. NR 116.12 (2)(b), Wis. Admin. Code if they are approved by the DNR and meet specific standards. As defined in

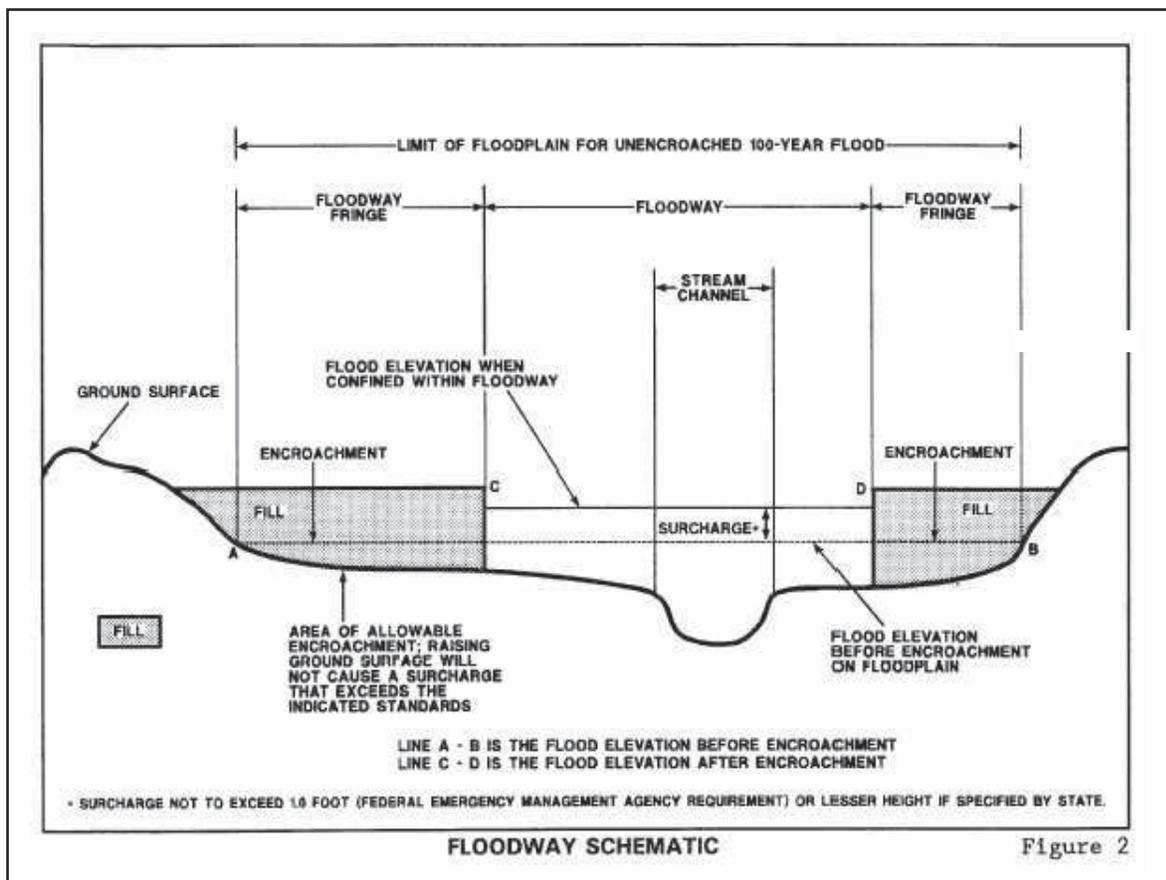


Figure 2.6 FEMA Floodway schematic

s. NR 116.03 (1e), Wis. Admin. Code, a campground is any parcel of land that is designed, maintained, intended, or used for the purpose of providing sites for non-permanent overnight use by four or more camping units, or that is advertised or represented as a camping area. Under ch. HFS 178, Wis. Admin. Code, the Department of Health and Family Services must also license campgrounds. The campground standards in s. NR 116.12, Wis. Admin. Code, apply to both the floodway and floodfringe areas. There may be no permanent structures such as decks, patios, gazebos, etc. attached to the unit or the site. Larger units designed for permanent placement, such as park models, should not be allowed unless the campground operator can demonstrate that the unit is towable and is removed every 180 days.

Campgrounds and other recreational use areas in the floodway usually require bathroom and shower facilities. While ch. NR 116, Wis. Admin. Code specifically prohibits any sewage system in the floodway, it does provide for portable latrines that are removed during flooding. Other systems associated with recreational areas that meet the applicable provisions of local ordinances and ch. COMM 83, Wis. Admin. Code, are also permitted. All new bathroom and shower facilities must meet the development standards applicable to floodway areas. They may not be designed for human habitation, they must have low flood damage potential, and they cannot

Uses of the Floodway			
	Activities Allowed Without a Permit	Activities Requiring a Permit	Prohibited Activities
Agriculture	Cropland Pasture Orchards Forestry	Additions to existing storage facilities and barns	Any new structures*
Recreation	Natural areas	Tennis courts, golf courses Swimming pools Piers, marinas Campgrounds Open-sided park shelters Replacement on-site sewage disposal system (holding tank)	Wells for drinking water On site sewage systems (see COMM 83)
Residential	Yards, gardens, patios	Replacement on-site sewage disposal system (holding tank) Public sanitary sewer to serve existing development	Any new structures
Commercial, Industrial		Surface parking lots, loading areas Airport landing strips Sand and gravel operations	Any new structures
Utilities, Public Facilities		Railroads, streets Bridges, dams Utility lines, pipelines	Solid waste disposal Sewage treatment plants Wells

* See s. NR 116.12, Wis. Admin. Code for a detailed discussion of prohibited activities

Table 2.4 Uses of the Floodway

cause obstruction to flood flows. Requirements in chs. NR 116 and COMM 83, Wis. Admin. Code also provide that all treatment tanks, holding tanks, and dispersal tanks must be made and maintained watertight to prevent infiltration. Vent pipes and observation pipes need to end at least two feet above the RFE.

Any person proposing to install a new bathroom or shower facility associated with a recreational area in a floodway needs to apply for all necessary permits from the local governmental unit as they would for any other use permitted in the floodway. As part of the permit process, a floodway encroachment analysis would need to be completed and approved by the DNR.

Campgrounds located in the floodway must be located in areas where 72 hours warning of an approaching flood can be provided. Also, an adequate flood warning system and evacuation plan must be in place.

In addition to the above standards, the community must have procedures for monitoring and permitting all campgrounds. One option may be to only allow camping between defined dates (e.g., May 15 through November 15) each year. While these regulations apply to campgrounds, there are also regulations for camping on private lands in s. NR 116.12 (2m), Wis. Admin. Code. Such camping does not require a permit if an easily removed tent is used, the camping is in an area that is not advertised as a camping area and the area has less than four sites and the camping unit remains on-site less than 180 consecutive days.

Mills and Powerhouses: The use of existing mills and powerhouses in floodway areas is permitted due, in part, to the fact that they are functionally dependent on waterfront locations. They must, however, meet all the criteria in ch. NR 116, Wis. Admin. Code.

If restoration or rehabilitation of a mill or powerhouse is proposed that will change the use to one not permitted in a floodway – i.e., commercial or residential - then the area must be rezoned to floodfringe or non-floodplain to allow the use. Before rezoning can be accomplished, an analysis must be conducted to show how the removal of the property from the floodway affects the height of the regional flood. If any increase in the profile of the regional flood results from the removal, then easements or other legal arrangements are required with every property owner affected by an increase, before the rezoning can be completed.

B. Flood Fringe

The floodfringe is that area of the floodplain outside the floodway covered by the regional flood event. The boundaries of the floodfringe area are determined by a detailed engineering analysis. Data from the engineering analysis can be found in a community's FIS.

For most construction in the floodfringe, protection is based on the flood protection elevation (FPE), which is two feet above the RFE. This safety margin is needed because flood study methods assume that water flows unobstructed through bridges, culverts, and other natural or man-made constrictions. No consideration is included for ice jams or debris accumulation that obstructs bridge openings or floodways. As a result, elevations higher than the RFE can and do occur.

Development in the floodfringe is divided into permitted, prohibited and permitted by special

permit uses. A listing of these uses can be found in Table 2.5 *Uses of the Floodfringe*. Uses permitted in the floodway are also permitted in the floodfringe. However, the standards for development may be different.

Standards: General standards for development in the floodfringe can be found in s. NR 116.13, Wis. Admin. Code. The standards require that all permitted development be compatible with local land use plans, do not cause an obstruction to flood flows, do not affect the conveyance capacity of the river or stream, have dryland access, and do not increase the regional flood height.

Residential: Section NR 116.13 (2), Wis. Admin. Code requires that all residential structures built in the floodfringe must be floodproofed using fill. The lowest floor, excluding the basement or crawlway must have the finished surface at or above the flood protection elevation (FPE). The FPE is two feet above the RFE. Floodproofing must be on fill which should be of a compacted material that will retain its structural bearing capacity under saturated conditions. The structure must also be provided with dryland access. If a community grants a variance to allow a basement floor to be placed below the FPE, then the applicant must be required to provide certification from a registered engineer that the basement walls are floodproofed to the FPE.



Figure 2.7 Structure elevated on fill

Accessory Structures: Accessory structures are defined in s. NR 116.03 (1), Wis. Admin. Code as “any facility, structure, building or use which is accessory or incidental to the principal use of a property, structure or building.” Under s. NR 116.13 (3), Wis. Admin. Code, any accessory structures to be constructed in the floodfringe cannot be used for human habitation. Any accessory structure may have its lowest floor no more than two feet below the RFE. These structures must be firmly anchored to the ground and have a low flood damage potential. All service facilities (heating, electrical, etc.) must be at or above the FPE. Boathouses are not considered accessory structures.

Manufactured Homes and Parks: While manufactured homes and parks are not addressed specifically in ch. NR 116, Wis. Admin. Code, the NFIP does address them under 44 CFR 60.3. These units are treated the same as other residential or commercial buildings. They must be properly anchored in order to resist floatation, collapse, and lateral movement and be elevated.

Because of their construction, manufactured homes are particularly susceptible to flood damage. Communities should take care in reviewing the location for proposed manufactured homes and subdivisions in order to ensure the structures will be reasonably safe from flooding. They may also consider requiring the filing of evacuation plans with local emergency officials in order to ensure adequate vehicular access and escape routes.

Subdivisions: A subdivision is defined in ch. 236.02 (12), Wis Stats., as a division of a lot, parcel, or tract of land into five or more parcels or building sites of one and one-half acres each

or less through successive divisions within a period of five years. Under 44 CFR 60.3, subdivisions must be reasonably safe from flooding, and have all utilities and facilities located and constructed so as to minimize or eliminate flood damage. Also, if a subdivision is proposed to be located within an approximate A zone, then an RFE must be developed.

Even after thorough review, communities should require that sufficient recorded statements be placed on the deeds specifying that floodplain management standards must be met before issuing any building permits. While a floodplain lot may be developable, buyers may not know they cannot have a basement or that they cannot place fill on the floodway portion of their lot for some accessory activity they envisioned. Local officials should place restrictions on the recorded plat or on each deed specifically stating which future activities are prohibited.

Commercial Development: Section NR 116.13 (4), Wis. Admin. Code, requires commercial development to meet all of the criteria applicable to residential development. Certain yards,

Uses of the Floodfringe			
	Activities Allowed Without a Permit	Activities Permitted Under Special Conditions Permit	Prohibited Activities
Agriculture	Cropland and pasture Orchards and forestry	Farmhouses Barn silos and sheds Implement sales	
Recreation	Natural areas	Piers and marinas Swimming pools Wells for drinking water Shelters Parks, trails, and playgrounds Golf courses and tennis courts Campgrounds	
Residential	Yards, gardens, and patios	Garages and storage sheds Residential buildings Manufactured homes On-site sewage disposal systems and wells	
Commercial, Industrial	Parking lots and loading areas	Commercial structures Stables and kennels Sand and gravel operations Airport landing strips	Hazardous material processing or storage sites
Utilities, Public Facilities		Railroads Bridges and dams Utility lines and pipelines	Solid or hazardous waste processing or storage sites

Table 2.5 Uses of the Floodfringe

parking lots and other accessory structures may be at elevations below the FPE. However, no area for general public use can be inundated to a depth greater than two feet or subjected to flood velocities greater than two feet per second during the regional flood. However, these areas may be flooded more deeply if there is an adequate warning system provided.

Manufacturing and Industrial Development: For manufacturing and industrial development, s. NR 116.13 (5), Wis. Admin. Code, requires projects to be protected to the FPE by fill or floodproofing. In order to minimize interruption of plant operations, a community may require greater protection if flood durations are longer than one day. However, less protection as outlined in s. NR 116.13 (4), Wis. Admin. Code, may be allowed for surface parking lots, storage yards, and accessory structures.

Storage of Materials: Section NR 116.13 (6), Wis. Admin. Code, requires materials that are buoyant, flammable, explosive, or injurious to human, plant, fish, or other aquatic life must be floodproofed or stored at or above the FPE. Also, adequate measures must be taken to contain materials during flooding.

Public Utilities, Wells, Septic Systems: The requirements for public utilities including streets and bridges, private sewage systems and public and private wells are explained in s. NR 116.13 (7), (8) and (9), Wis. Admin. Code. When the failure or interruption of service would endanger public health and safety, utilities or bridges must be floodproofed to the FPE. However, minor roads or non-essential utilities are exempt from these standards. While both on-site sewage systems and wells must be floodproofed to the FPE, wells must also meet provisions of local code and chs. NR 811 and NR 812, Wis. Admin. Code. Sewage systems must meet provisions of the local sanitary ordinance and the Department of Commerce's sanitation rule, ch. COMM 83, Wis. Admin. Code.

Levees: Areas protected by certified levees may be removed from floodplain regulations. FEMA defines a certified levee as one which has been approved by the USACE or some other certifying entity. However, if the DNR finds the levee inadequate, the area once considered to be protected will immediately become subject to Wisconsin floodplain standards. Local officials should warn residents in these areas that if levees become unsafe or no longer provide adequate protection from flood risk, their uses or structures will become nonconforming and flood insurance may be required or insurance rates will increase.

Further information on FEMA's standards for levees can be found at: http://www.fema.gov/pdf/fhm/frm_gsah.pdf.

Some communities protected by levees add the following notice to their permits:

NOTICE – Flood protection requirements for your development have been reduced because of the presence of a levee. The reduced requirements apply only as long as the levee is maintained properly. Should the levee deteriorate, your structure or use may become nonconforming. Full flood protection requirements will increase.

C. General Floodplain

The general floodplain district is that area of the floodplain in which detailed engineering studies have not been completed. The boundaries of the floodplain are approximated and based on the best available data. No floodway has been determined.

Development requiring a permit is restricted in the general floodplain district until an engineering analysis is done to determine the exact boundaries of the floodplain and the floodway. Until the engineering analysis required under s. NR 116.07, Wis. Admin. Code, is completed and approved by DNR, it cannot be determined which development standards to enforce. Once the appropriate flood zone is determined, the development standards for that zone apply.

D. Shallow Depth Flooding

Shallow depth floodplains are developed areas of the floodplain where depths do not exceed one foot, the duration of flooding does not exceed six hours, and a land use plan is in effect that includes drainage ways of sufficient capacity to convey the regional flood. The development standards for areas of shallow depth flooding are found in s. NR 116.14 (1), Wis. Admin. Code. They are generally the same as those for the floodfringe and must meet the requirements of s. NR 116.13, Wis. Admin. Code.

E. Flood Storage

The development standards for flood storage areas are found in s. NR 116.14 (2), Wis. Admin. Code and are listed in Table 2.6 *Flood Storage District Development Standards*. A flood storage engineering model accounts for all possible storage capacity (marshes, ponds, etc.) in a watershed and thus lowers the RFE to the greatest extent possible. Because there is no “unused” storage capacity, this district protects storage areas and assures that any development will not decrease the flood storage capacity, causing higher flood elevations.

Flood storage districts can only be developed if compensating storage is created (“cut and fill”) to replace that area lost to development. The compensating area must be higher than the groundwater table. If compensating storage can not be provided, the entire storage district must be rezoned to floodfringe, following analysis, in order to allow the proposed development.

F. Coastal Floodplain

Coastal floodplains, found along Lakes Superior and Michigan, are also areas of special concern. Development standards for coastal areas are found in s. NR 116.14 (3), Wis. Admin. Code. The FIS and FIRMs for Ozaukee and Sheboygan counties include wave set-up and run-up elevations

Flood Storage District Development Standards	
<ul style="list-style-type: none">• Development cannot cause an increase equal to or more than 0.01 of a foot in the RFE.• Any reduction in flood storage must be compensated for by creating additional storage that is equal to that which was lost.	<ul style="list-style-type: none">• If compensatory storage cannot be provided, the area may not be developed unless the entire flood storage area is rezoned to the floodfringe district.• No area in the floodplain may be removed from the flood storage district unless the area has been filled to the FPE and is contiguous to other lands lying outside the floodplain.

Table 2.6 Flood Storage District Development Standards

for the Lake Michigan coastline. New studies for other counties that have coastlines on Lake Michigan or Lake Superior will be evaluated for wave set-up and run-up and will be mapped to incorporate these hazards where needed. The guidelines and specifications for wave set-up and run-up can be found at: http://www.fema.gov/pdf/fhm/frm_gsad.pdf.

G. Floodplain Islands

Floodplain islands are natural landforms within the floodplain that are surrounded, but not covered, by water during the regional flood. While ch. NR 116, Wis. Admin. Code does not require floodplain islands to be regulated as part of the minimum standards, under s. NR 116.09 (1) (b) 4, Wis. Admin. Code, they must be described on a community's official floodplain zoning map if they have been identified by a detailed study. Communities may elect to regulate floodplain islands under their floodplain zoning ordinances.

H. Nonconforming Structures/Uses

The term "nonconforming" applies to both structures and uses. A nonconforming use is a previously existing lawful use of a structure, building, or property that is not in conformity with the provisions of the floodplain zoning ordinance. A nonconforming structure, also referred to as a nonconforming building, is a previously existing lawful structure that is not in conformity with the dimensional, structural, or elevation requirements of the floodplain zoning ordinance.

Standards: Nonconforming uses and buildings may be modified or repaired under the standards outlined in s. NR 116.15, Wis. Admin. Code. However, they must become conforming if the use is discontinued for more than 12 months or if the cost of the modification or repair equals or exceeds 50% of the equalized or assessed value of the structure or if the structure is substantially damaged. While provisions such as discontinuation of use, the 50% rule and substantial damage apply to all nonconforming structures and uses, there are important distinctions between floodway and floodfringe properties as shown in Table 2.7 *Nonconforming Provisions Compared*.

Floodway: In the floodway, all pre-existing habitable structures are nonconforming since only open space uses are permitted. Under s. NR 116.15 (2), Wis. Admin. Code, no modifications, repairs or additions are allowed on any nonconforming use or structure unless the project has received a permit or variance. A property owner may also not create or add on to an existing private sewage system or well in a floodway. All maintenance of the private sewage system or well must meet the requirements of municipal ordinances and all applicable requirements of ch. COMM 83, Wis. Admin. Code for sewage systems, or of chs. NR 811 and NR 812, Wis. Admin. Code for wells.



Figure 2.8 Flooded nonconforming structures

Floodfringe: In the floodfringe, all residential or commercial structures that are not properly elevated with the lowest floor, excluding a basement or crawlway, two feet above the RFE are

Nonconforming Provisions Compared	
Floodway	Floodfringe
All additions must be floodproofed* to FPE by means other than fill.	All additions must be floodproofed* to the FPE; residential and commercial additions must use fill.
Once changes total 50% of the present equalized assessed value over the life of the structure, no further changes are allowed unless the site can be rezoned or the structure made conforming.	Once changes total 50% of the present equalized assessed value over the life of the structure, the entire structure must be made conforming.
No additions may increase the obstruction to flood.	Changes may be protected to an elevation lower than the FPE by action of the Board of Adjustment or Appeals if: <ul style="list-style-type: none"> • all tests for a variance are met • the structure is not used for human habitation • the structure has low flood damage potential (water can flow through) • human lives will not be endangered • flood depth will not exceed two feet • flood velocities will not exceed two feet per second • no dangerous materials will be stored
	A one time exception can be granted if: <ul style="list-style-type: none"> • a permit or variance would otherwise be granted • the addition is no larger than 60 square feet in area • the addition does not raise the total of additions over the life of the structure over 50%

**All floodproofing must be certified*

Table 2.7 Nonconforming Provisions Compared

nonconforming. While the basement or crawlway does not have to be above the FPE, the lowest floor must be located at or above the RFE and must be floodproofed to the FPE. Under s. NR 116.15 (3), Wis. Admin. Code, no modifications, repairs or additions are allowed unless the project has received a permit or a variance. A variance may be granted by the Board of Adjustment or Appeals if the elevation or floodproofing provisions would result in unnecessary hardship, and only if the building is not used for human habitation. In addition, all structures that do not have dry-land access are also considered nonconforming.

Discontinuation of Use: Section NR 116.15 (1)(b), Wis. Admin. Code states that if a nonconforming use or the use of a nonconforming building is discontinued for 12 consecutive months, then it is no longer permitted and must conform to the standards of the flood zone in

which it is located. Nonconforming status is granted for a structure or use at the time of ordinance adoption, for the structure or use in place on that site at that time. If the structure is moved, it loses its nonconforming status.

Modifications/Repairs: Section NR 116.15 (1)(c), Wis. Admin. Code requires modifications and repairs to be reviewed to determine if the cost of the modification or repair equals or exceeds 50% of the equalized assessed value of the structure. The cost comparison is cumulative over the life of the building. For additions, all material and labor costs count toward the 50% limit. Local market rates must be assigned to all labor and materials that are used for the project. Structures with modifications or repairs which equal or exceed the 50% threshold must be changed to a conforming building with a conforming use for the flood zone in which it is located.

Ordinary maintenance repairs do not count against the 50% limit. Typical ordinary maintenance repairs include:

- internal and external painting;
- decorating;
- paneling;
- replacement of doors, windows, and other nonstructural components; and
- maintenance, repair, or replacement of existing private sewage systems, water supply systems, or connections to public utilities.

An example of the 50% rule can be found in Table 2.8 *Example 50% Rule for Expansion of Nonconforming Structures*.

Example 50% Rule for Limited Expansion of Nonconforming Structures					
Year	Current value of structure	Value of proposed addition	% Proposed addition is of current value	% Lifetime additions are of current value	Addition allowed (less than 50%)
1950	\$10,000	(new)			
1970	\$40,000	\$10,000	25%	25%	Yes
1980	\$80,000	\$16,000	20%	45%	Yes
1992	\$110,000	\$16,500	15%	60%	No

Table 2.8 Example 50% Rule for Limited Expansion of Nonconforming Structures

Substantial Damage: Section NR 116.15 (1) (d), Wis. Admin. Code, requires that any nonconforming building or any building with a nonconforming use which is destroyed or severely damaged may not be replaced unless the replacement structure or use conforms with the flood zone in which it is located.

If a structure is “substantially damaged” (50% or more of equalized assessed value), it must be brought into full compliance with the floodplain zoning ordinance. In the floodway, that means the structure must be moved out of the floodway. Substantial damage assessments are the responsibility of the zoning official or their delegate (building inspector, clerk, private contractor, etc.). The assessment should be done as quickly as possible to ensure accurate results. Authority to conduct substantial damage assessments is granted under s. NR 116.15 (7), Wis. Admin.

Code, and s. NR 116.19 (2) (b), Wis. Admin. Code. The responsibilities of the local zoning official after a disaster for structures located in the SFHA are listed in Table 2.9 *Post-Disaster Responsibilities*.

Post-Disaster Responsibilities	
<ul style="list-style-type: none"> • Notify property owners in writing of requirements for repairs • Conduct post-disaster damage assessments • Review and issue permits for allowed repairs 	<ul style="list-style-type: none"> • Enforce substantial damage requirements of local ordinance • Maintain records of permits issued • Provide records to DNR and other concerned state and federal agencies

Table 2.9 Post-Disaster Responsibilities

Non-flood Disasters: Under s. 87.30 (1d), Wis. Stats., nonconforming structures damaged by a non-flood disaster may be restored to their original, pre-disaster condition, provided that all federal regulations are met. The law defines a “non-flood disaster” as a fire or an ice storm, tornado, windstorm, mudslide, or other destructive act of nature. All other provisions of state and local regulations must be followed when repairing or restoring non-flood-damaged structures. Once the structure is repaired or restored, it is still considered a legal nonconforming structure.

An exemption for shorelands was created in s. 59.692 (1s), Wis. Stats. allowing nonconforming structures damaged by any natural disaster (including floods) to be restored. If a property is in both the shoreland and the floodplain zoning jurisdiction, the more restrictive (floodplain) rules apply. In the floodplain, structures must still meet minimum NFIP requirements.

Zoning administrators must ensure that claims of non-flood disaster related damages are substantiated – particularly claims of non-flood disasters that occurred in previous years.

2.22 EXCEPTIONS TO THE STANDARDS

All zoning ordinances should include processes to allow for modifications to the standards in response to extraordinary circumstances, to resolve disagreements over the interpretation of the regulations or to account for the development of more refined engineering data. Ordinances may also include exceptions specific to certain flood zones.

A. Variances

A variance as described under s. NR 116.21 (4), Wis. Admin. Code, is an authorization from a local Board of Adjustment or Appeals for the construction or maintenance of a building or structure in a manner that is inconsistent with dimensional standards contained in the floodplain zoning ordinance. A variance may permit deviations from the dimensional standards established in a floodplain ordinance. It may not permit a use of property otherwise prohibited by the floodplain zoning ordinance or allow construction not protected to the flood protection elevation.

Variance criteria for floodplain development include the tests of unnecessary hardship. A variance should always ensure the continued protection of life, health, and property. All variances to floodplain standards must meet the criteria listed in Table 2.10 *State Floodplain Variance Criteria*. In addition to the criteria listed in s. NR 116.21 (4), Wis. Admin. Code, a variance request must meet FEMA requirements as listed in 44 CFR 60.6 and shown in Table 2.11 *FEMA Floodplain Variance Criteria*.

State Floodplain Variance Criteria	
<ul style="list-style-type: none"> • shall be consistent with the spirit of the floodplain zoning ordinance • may not be contrary to the public interest and may not damage the rights of other persons or property values in the area • may not have the effect of granting, increasing, or extending a use of property that is prohibited in that zoning district 	<ul style="list-style-type: none"> • may not be granted for a use that is common to a group of adjacent lots (need amendment instead); • may not be granted for actions that require an amendment to the floodplain zoning ordinance • may not be granted solely on the basis of economic gain or loss; • may not be granted for a self-created hardship

Table 2.10 State Floodplain Variance Criteria

Any person granted a variance from floodplain requirements must receive written notice that increased flood insurance premiums may result. This notice must be retained in local zoning board files.

Variance Concerns: It is important for variance applicants and local officials to understand some of the ramifications of granting variances in the SFHA. First, insurance premiums are likely to be high. The variance approval does not affect how the NFIP will rate the flood risk and the insurance premium. Insurance premiums are based on a structure’s flood risk and value. Second, the granting of numerous variances could jeopardize a community’s eligibility for the NFIP. While all communities are expected to enforce regulations as written, both the state and FEMA realize that certain circumstances require granting variances. FEMA and the state closely monitor variances granted by a community. If it is determined the variance procedure is being misused, the community may be suspended from the NFIP. Because of this potential ramification, local officials are required to submit all variance applications and hearing notices to the DNR for comment in advance of the Board of Adjustment or Appeal’s action. The decision of the Board must also be sent to the DNR.

FEMA Floodplain Variance Criteria	
<ul style="list-style-type: none"> • may not cause any increase in the regional flood elevation • can only be granted for a lot that is less than one-half acre and is contiguous to an existing structure constructed below the RFE • shall only be granted upon showing good and sufficient cause • shall be the minimum relief necessary 	<ul style="list-style-type: none"> • shall not cause increased risk to public safety or create nuisances • may not allow any alteration of an historic structure, including its use, which would preclude its continued designation as an historic structure • shall not increase costs for rescue and relief efforts • shall not be contrary to the purpose of the local ordinance

Table 2.11 FEMA Floodplain Variance Criteria

B. Appeals

When a dispute arises over a decision made by a zoning administrator, an appeal may be made to the local Board of Adjustment or Appeals. Section NR 116.21 (5), Wis. Admin. Code, describes the requirements of an appeal. Any such appeal must include specific reasons for the appeal and be filed with the zoning administrator within a reasonable period of time. The zoning administrator is then required to provide the Board of Adjustment or Appeals with all pertinent records for their review prior to public hearing and decision.

An example of a situation which might result in an appeal could be the determination of the location of a flood zone boundary. Where there is a discrepancy between the floodplain zoning map and actual field conditions, the zoning administrator makes a determination by reading the elevation from the flood profiles. In such a case, the RFE governs. A permit may be granted if the site is above the RFE and contiguous to lands outside the floodplain. The zoning administrator may require a registered surveyor's or professional engineer's map showing the RFE. Record of the map change must be made on a copy of the official map, a second copy should be sent to the DNR field office, and the map amendment procedures started, making sure to allow adequate time for review by all agencies. The zoning administrator may also use the methods described in Section 2.10 A, Mapping and Engineering to define floodplain boundaries using approximate studies and then request a map amendment. The permit may not be granted until the amendment has been locally adopted and approved by the DNR.

If the applicant does not agree with the zoning administrator's determination, then an appeal may be made to the Board of Adjustment or Appeals. The applicant must be allowed to present arguments and technical evidence to the Board. Again, the RFE governs wherever it is available.

C. Amendments and Rezoning

If a variance is not an option for a certain project, other possibilities such as amendments or rezoning exist. Rezoning or amendment procedures for floodplain standards are similar to those for general zoning, except that special criteria and analysis are used to make the decisions. In addition, for communities participating in the NFIP, FEMA approval is necessary if FEMA-approved floodplain boundaries or elevations are to be changed.

As a community develops, changes to topography, floodplain boundaries, hydrology and hydraulics are inevitable. Also, the development of more refined data may point out problems with the original flood maps and profiles. For these reasons, floodplain maps, flood profiles, and floodplain ordinances may need to be amended.

Amendments or rezoning are required for any changes in the official floodway lines, water surface profiles, floodplain zoning maps or floodplain zoning ordinance. Actions which require an amendment by a community are listed in s. NR 116.21 (6) (a), Wis. Admin. Code. Actions requiring a rezoning are listed in s. NR 116.11 (2), Wis. Admin. Code.

All of the above situations need a local amendment and must receive approval from the DNR and FEMA. FEMA processes a variety of map revisions through the issuance of Letters of Map Change (LOMC). These letters include Letters of Map Amendment (LOMA), Letters of Map Revisions Based on Fill (LOMR-F), and Letters of Map Revision (LOMR). The information

required for the two most frequently issued LOMC is listed in Table 2.12 *Required Information for Letters of Map Change*.

LOMR and LOMR-F applications are reviewed and approved by DNR and FEMA. LOMA applications are reviewed and approved by FEMA. All LOMC must be kept by the community for which they are issued. Table 2.13 *NFIP Map Change Process* outlines the process followed by FEMA when reviewing LOMC applications.

Required Information for Letters of Map Change	
Letters of Map Amendment	Letters of Map Revision Based on Fill
<ul style="list-style-type: none"> • A map showing both property lines and local roads and watercourses (Plat Map, recorded deed and tax assessor's map of the neighborhood, etc.) • Elevation Certificate or other certified elevation survey • Completed MT-1 application form http://www.fema.gov/fhm/dl_mt-1.shtm 	<ul style="list-style-type: none"> • A map showing both property lines and local roads and watercourses (Plat Map, recorded deed and tax assessor's map of the neighborhood, etc.) • Information indicating existing ground elevations and the date of fill (Elevation Certificate, topographic map, etc.) • Signed community acknowledgment of fill placement form that provides written assurance by the participating community that they have complied with the appropriate minimum floodplain management requirements. • Completed MT-2 application form http://www.fema.gov/fhm/dl_mt-2.shtm

Table 2.12 Required Information for Letters of Map Change

Amendments: Amendments may be required as the result of specific actions or as the result of a rezoning as outlined in s. NR 116.21 (6), Wis. Admin. Code. Actions requiring an amendment to the floodplain ordinance include, but are not limited to:

- any change in the official floodway lines or in the boundaries of the floodplain area;
- settlement of conflicts between the water surface profiles and the floodplain zoning map;
- any fill, encroachment or development into the floodway which will result in obstructing flood flows; and
- any upgrading of floodplain zoning ordinances.

Any amendments to the official floodway lines, water surface profiles, floodplain zoning maps or floodplain zoning ordinance must be reviewed and approved by the DNR prior to becoming effective.

Rezoning: If an amendment is not possible, then the land owner/developer has one other option – rezoning. As with nonconforming uses, variances, and amendments; rezoning must meet the standards established in s. NR 116.11 (2), Wis. Admin. Code. Rezoning standards ensure that new floodplain regulations support the purpose of floodplain zoning to protect life, health, and property. Any proposed rezoning must be based on adequate technical data, and all communities affected by an increased RFE must be notified. Legal arrangements must be made with all affected property owners, and before it is effective the rezoning must be reviewed and approved by the DNR.

NFIP Map Change Process				
Typical Situations	Method of Change	Request to FEMA	Community/DNR Action	Required Data
1. Current floodplain map is incorrect ¹	Map Revision	Community/DNR	Ordinance Amendment/Review ³	MT/2
2. Significant physical (topographic) changes in the floodplain	Map Revision	Community/DNR	Ordinance Amendment/Review ³	MT/2
3. Construction of flood control project	Map Revision	Community/DNR	Ordinance Amendment/Review ³	MT/2
4. Insignificant physical (topographic) changes in the floodplain	LOMR	Community/DNR	Ordinance Amendment/Review ³	MT/2
5. Structure/parcel incorrectly shown in the floodplain ⁴	LOMA	Property Owner	Assistance to Property Owner	MT/1
6. Structure/parcel in the floodplain (on fill) ⁵	LOMR	Community Concurrence	Ordinance Amendment/Review ³	MT/2
7. Proposed construction in the floodplain -incorrectly mapped -proposed filling or construction	CLOMA CLOMR	Community Concurrence	Assistance to Property Owner	MT/1 MT/2

NOTE: FEMA determines the method of change for individual cases.

- 1 Study is scientifically or technically incorrect by, incorrect or updated base map, revised hydraulic or hydrologic data, or new study techniques.
- 2 Found in supplementary materials, NFIP current procedures.
- 3 FEMA will not issue a new map or LOMR without DNR concurrence. DNR will not provide this until review and approval of a local map/ordinance amendment.
- 4 Constructed before the date of the first NFIP map for that community.
- 5 Constructed after the date of the first NFIP map for that community.

LOMA – Letter of Map Amendment http://www.fema.gov/fhm/dl_mt-1.shtm
LOMR – Letter of Map Revision http://www.fema.gov/fhm/dl_mt-2.shtm
CLOMA – Conditional Letter of Map Amendment http://www.fema.gov/fhm/dl_mt-2.shtm
CLOMR – Conditional Letter of Map Revision http://www.fema.gov/fhm/dl_mt-2.shtm

Table 2.13 NFIP Map Change Process

In addition, specific standards for different types of rezonings must be met. Before rezoning a floodplain district to accommodate any development that causes an increase in flood height affecting other properties, “appropriate legal arrangements” with all affected property owners are required. Easements are the most common form of these legal arrangements between private parties. However, outright purchase of the property affected by the increased flooding is also an alternative. Communities may use powers of condemnation proceedings for public works projects as well as easements. In these situations there must be an official map amendment process to complete the rezoning effort.

The DNR cannot approve any rezoning until it has been demonstrated that all affected property owners agree to the increase in flood height resulting from the development or rezoning. This evidence should include the following documents from the community and should be reviewed by the DNR’s regional floodplain staff before issuing DNR approval of the amendment:

- the engineering analysis showing the effects of rezoning, including a map showing all of the area affected by higher flood elevations;
- a list of properties and owners affected by any increase of the RFE 0.01 foot or more;
- an easement filed with the Register of Deeds, with each property owner’s signature agreeing to the increase in flood height their property will be subject to as shown in the analysis;
- documentation of the affected community’s amendments to their floodplain zoning map and/or profiles;
- notification of all communities affected by an increase in RFE; ch. NR 116, Wis. Admin. Code, requires subsequent amendment by these communities;
- the community’s amended ordinance certified by the clerk as a true copy of the adopted ordinance;
- the Class 2 public hearing notice; and
- proposed project plan showing grading or filling that will result in the subject property area being physically incapable of conveying flood flow.

Table 2.14 *Changing Floodplain Zones* outlines the guidelines for rezoning specific flood districts.

2.23 ENFORCEMENT/MONITORING

In order to ensure that floodplain regulations are being followed, there are three levels of regulation:

- the community;
- the state; and
- the federal government.

Enforcement is primarily the responsibility of the community. However, the DNR provides assistance to communities for monitoring and enforcement activities. The DNR also appeals improperly issued variances or permits and refers cases to the Department of Justice if local governments fail to take enforcement action. The federal government’s role is to provide the minimum regulatory standards and enforcement mechanisms for the management of the nation’s floodplains.

Changing Floodplain Zones	
Floodway to Floodfringe	<ul style="list-style-type: none"> – Effect of rezoning calculated by comparing existing flood profile with flood profile resulting from decreased area to convey flowing water
Floodfringe to Floodway	<ul style="list-style-type: none"> – Consistent with other local codes, ordinances, and state statutes – Current floodway lines kept on file
Floodway to Shallow Depth	<ul style="list-style-type: none"> – Maximum water depth during regional flood one foot or less for six hours or less – Duration determined by synthetic hydrograph (mathematical analysis) – Area to be rezoned is developed (street, sewer) – Area to be rezoned is subject to the land use plan including drainage capacity to convey the regional flood – Local ordinance contains development standards for shallow depth district
Shallow Depth to Floodfringe	<ul style="list-style-type: none"> – Entire shallow depth district rezoned to floodfringe – Effect of rezoning calculated by comparing existing flood profile to profile resulting when entire shallow depth district is no longer available to convey flood flow
Floodfringe to Flood Storage	<ul style="list-style-type: none"> – Method used to analyze storage and determine regional flood elevation approved by the DNR (there is no standard method) – Local ordinance contains development standards for flood storage district
Flood Storage to Floodfringe	<ul style="list-style-type: none"> – Effect of rezoning calculated by comparing existing regional flood profile with profile resulting from loss of flood storage in area of proposed rezoning
Floodfringe to Non-floodplain	<ul style="list-style-type: none"> – Building site filled to two feet above the RFE – Vehicular access route above the RFE to land outside floodplain

Table 2.14 Changing Floodplain Zones

There are various tools for enforcement and regulation at both the community and state levels as well as the federal level. These tools include, but are not limited to certiorari review, direct state enforcement, writ of mandamus, probation and or suspension from the NFIP, and suspension from the Community Rating System (CRS).

The DNR is responsible for establishing statewide minimum standards for local ordinances and has oversight authority for a community's adoption, amendment, and administration of those ordinances. While the DNR may appeal cases to the circuit court, it is best to resolve a violation at the local level. The goal is to be proactive in order to build state and local partnerships addressing potential violations before they occur. The corrective actions which may be taken by the state are listed in Table 2.15 *State Level Corrective Actions*. A community that violates state ordinance standards is probably violating federal standards as well. Communities in violation can be put on probation, incurring a \$75 surcharge on all flood insurance policies followed by suspension and thereby becoming ineligible for flood insurance or disaster assistance. Communities participating in the CRS Program, can be suspended if the violation is not resolved.

A community is responsible for implementing the floodplain program as a condition of its participation in the NFIP and it agrees to uphold the regulations as well as principles of floodplain management.

State Level Corrective Actions	
<ul style="list-style-type: none"> • Active prosecution of violations of the floodplain zoning ordinance • Injunction to stop construction until an adequate floodplain zoning ordinance can be adopted and approved by the department 	<ul style="list-style-type: none"> • Adoption of an adequate floodplain zoning ordinance and submittal to the appropriate department regional office for approval: <ul style="list-style-type: none"> -the department may seek an injunction to stop construction in the floodplain area -the department may seek an injunction for removal or a fine or both for any violation of floodplain zoning ordinance

Table 2.15 State Level Corrective Actions



CHAPTER 3

SHORELAND ZONING

Shoreland zoning applies to unincorporated areas and in limited situations, cities and villages. Section 59.692, Wisconsin Statutes requires counties to adopt shoreland zoning ordinances and chapter NR 115, Wisconsin Administrative Code, establishes minimum standards for shoreland zoning ordinances.

Section 59.692, Wis. Stats., requires each county to zone, by ordinance, all shorelands in its unincorporated areas. The purpose of the shoreland zoning ordinance is to promote public health, safety, and welfare; and to achieve the purposes of s. 281.31, Wis. Stats., which are to “maintain safe and healthful conditions; prevent and control water pollution; protect spawning grounds, fish and aquatic life; control building sites, placement of structures and land uses; and reserve shore cover and natural beauty.”

Shoreland zoning may also be required in certain circumstances in incorporated areas. Section 59.692 (7)(a), Wis. Stats., requires that the provisions of a county shoreland zoning ordinance shall continue in effect in any shoreland area annexed by a city or village after May 7, 1982. In addition, s. 59.692 (7)(ad), Wis. Stats., requires that the provisions of a county shoreland zoning ordinance shall continue in effect in any shoreland area that is part of a town that incorporates as a city or village after April 30, 1994. These requirements are discussed in more detail in Section 3.60 of this chapter. An example of a shoreland zoning map is shown in Figure 3.1.

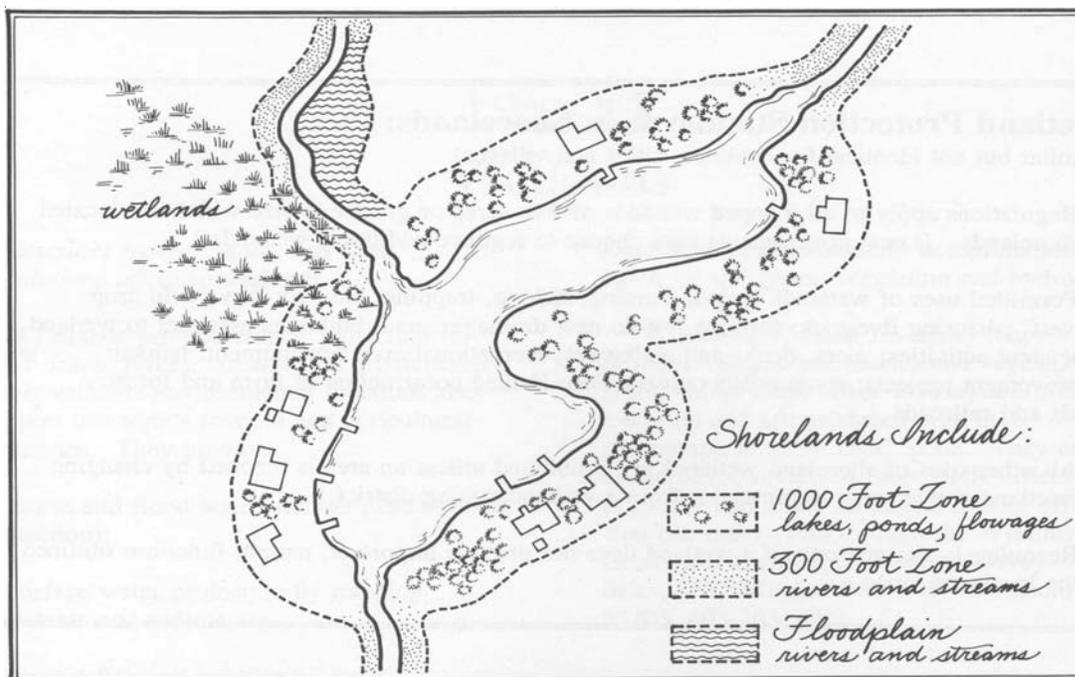


Figure 3.1 Shoreland Zoning Map

Section 59.692 (1)(b), Wis. Stats., defines shorelands as lands within the following distances from navigable waters:

- 1,000 feet of the ordinary high water mark of a lake, pond or flowage; or
- 300 feet of the ordinary high water mark of rivers and streams or to the landward side of the floodplain, whichever distance is greater.

The statute also provides that if the navigable water is a glacial pothole lake, the measurement of 1,000 feet shall be from the high water mark of the lake. Land adjacent to a farm drainage ditch with no previous stream history or that was a non-navigable stream before ditching is exempt from county shoreland zoning if the land adjacent to the farm drainage ditch is maintained in non-structural agricultural uses and if it is not adjacent to a navigable stream or river (s. 281.31 (2m), Wis. Stats.). Standards for navigability and ordinary high water mark determinations are discussed in Sections 3.51 and 3.52 of this chapter.

Chapter NR 115, Wis. Admin. Code, contains minimum standards for county shoreland zoning ordinances that are designed to protect water quality, fish and wildlife habitat, and natural scenic beauty. These standards may be incorporated into comprehensive zoning ordinances or they may stand on their own in a separate shoreland zoning ordinance.

The minimum standards in ch. NR 115, Wis. Admin. Code, are divided into three general regulatory areas:

- Shoreland Zoning Regulations
- Land Division Review
- Sanitary Regulations

Additional standards for land division, wells and sanitary systems can be found in both the Wisconsin Statutes and Administrative Codes. See Chapters 5 and 6 of this Guidebook for more information on related programs.

3.10 SHORELAND ZONING REGULATIONS

Minimum shoreland zoning standards are divided into five subsets:

- minimum lot sizes;
- structure setbacks;
- trees and shrubbery;
- filling and grading; and
- nonconforming uses/structures.

3.11 MINIMUM LOT SIZES

Establishment of minimum lot sizes for the shoreland area promotes public health, safety, and welfare; and protects against pollution to navigable waters. To achieve these goals, a shoreland lot should be large enough to provide:

- areas for infiltration of rainfall and stormwater;

- room for a vegetated buffer to prevent stormwater infiltration and to preserve wildlife habitat;
- room for private sewage systems;
- adequate distances between wells and private sewage systems;
- separation between potentially intrusive or conflicting uses; and
- protection of natural scenic beauty.

A. General Standards

Lots that are served by a public sanitary sewer are required to have a minimum average width of 65 feet and a minimum area of 10,000 square feet. Lots that are not served by a public sanitary sewer require a minimum average width of 100 feet and a minimum area of 20,000 square feet. Chapter NR 115, Wis. Admin. Code, does not dictate how to measure the average minimum width of a lot, but many counties calculate it as the average of the lot width at the ordinary high water mark (OHWM) and at the OHWM setback line.

B. Multi-Unit Buildings

To be consistent with the density allowed under the minimum lot size standards in ch. NR 115, Wis. Admin. Code, counties should require in their shoreland zoning ordinances that the total area of the parcel of land that is proposed for multi-family development will equal or exceed the area of the minimum applicable lot size multiplied by the number of dwelling units. For example, a sewerer multi-unit project that proposes to have five units should be located on a parcel with a minimum of 50,000 square feet, whether or not each unit is a separate structure or in a single building. Multi-unit projects other than duplexes, whether an apartment building, a resort or other development, should have enough area to meet the minimum lot size requirements for each unit.

C. Condominiums

To be consistent with the density allowed under the minimum lot size standards in ch. NR 115, Wis. Admin. Code, counties should require in their shoreland zoning ordinances that the total area of the parcel of land that is proposed for condominium development will equal or exceed the area of the minimum applicable lot size multiplied by the number of condominium units. In other words, condominiums should be required to meet the same standards as other multiple-family developments. For example, a sewerer condominium project that proposes to have five condominium units should be located on a parcel with a minimum of 50,000 square feet, whether or not each unit is a separate structure or in a single building.



Figure 3.2 Condominiums

Condominium projects cannot be discriminated against based on the method of ownership and should be treated the same as other multi-unit projects, whether occupied as rental property or occupied by the condominium unit owner.

D. Mobile Home/Manufactured Home Parks

While there is no minimum size requirement specified in ch. NR 115, Wis. Admin. Code, for mobile home/manufactured home parks, to be consistent with the density allowed under the standards for minimum lot sizes, counties should require in their shoreland zoning ordinances

that individual home sites within a mobile home/manufactured home park must meet the minimum lot size requirements. The mobile/manufactured home and other structures must meet any other related standards, including OHWM setback requirements.

E. Planned Unit Developments

Planned unit developments (PUD) are a way to allow development of larger tracts of land and preserve open space. Smaller lot sizes or more intensive development is allowed on one portion of parcel in exchange for greater setbacks and shoreland buffers along adjacent waterways and preservation of open space, such as environmentally sensitive areas and shoreland buffers. Approval of a PUD must include formal, legally enforceable assurances that the open space will be preserved in perpetuity, and will not eventually be subdivided for development. These areas are often dedicated to local units of government or owners' associations as public parks or open space. PUD proposals should have the same level of review as subdivisions. This is one method available to developers of condominiums, multi-unit buildings, and mobile home parks to propose projects that may otherwise exceed density standards.

F. Nonconforming Lots

Nonconforming lots of record, also known as substandard lots of record, are lots that were created prior to adoption or amendment of shoreland regulations and do not meet the current minimum standards. While ch. NR 115, Wis. Admin. Code, is silent on the issue of development of these lots, many counties have adopted provisions to allow some development on nonconforming lots, if specified standards can be met. Property owners may also apply to the Board of Adjustment for consideration of a variance from minimum lot size and width dimensional standards on a case-by-case basis.

Local shoreland zoning ordinances often provide that if adjacent nonconforming lots are held in common ownership, they may not be sold or developed separately, except in compliance with current lot size standards.

3.12 ORDINARY HIGH WATER MARK SETBACKS

In addition to minimum lot sizes, minimum setbacks from the ordinary high water mark (OHWM) are utilized to protect shoreland features and functions. OHWM setbacks provide space for a vegetated buffer between development and surface waters. Setbacks must be established in order to protect public health, safety, and welfare, as well as to reduce flood hazards, avoid water pollution, protect wildlife habitat, and preserve natural scenic beauty.

A. General Standard

Unless an existing pattern of development exists, a setback of 75 feet shall be required from the OHWM of the adjacent body of water to the nearest part of the building or other structure. The setback is measured horizontally from the OHWM to the nearest extension of any building or other structure, including decks and overhangs. Chapter NR 115, Wis. Admin. Code, exempts piers, boat hoists and boathouses from the setback requirement.

B. Setback Averaging

Section NR 115.05 (3)(b) 1., Wis. Admin. Code, allows a reduced OHWM setback when an "existing pattern of development exists." Many counties have used setback averaging to reduce the OHWM setback in these cases where previous legal nonconforming development has

established an “existing pattern of development” within the shoreland setback area adjacent to the proposed building site.

Although there are no standards for setback averaging in ch. NR 115, Wis. Admin. Code, the formula typically adopted in shoreland zoning ordinances allows the setbacks of two nearby principal structures on adjacent lots to be averaged to determine the setback for a proposed structure. Ordinances vary in the distance the adjacent principal structures must be within to the proposed building site and how many adjacent principal structures are required.

If there is a principal structure with substandard setback on one side of the proposed construction site and no development or conforming development on the other, the substandard setback and the required 75-foot setback may be averaged. Many counties establish a minimum setback for setback averaging.

Setback averaging for accessory structures is not appropriate since prohibiting them in the shoreland setback area is not likely to cause a hardship or prevent a property owner from making reasonable use of shoreland property.

C. Piers, Boat Hoists, and Boathouses

There are some exceptions to the minimum OHWM setback. Piers, boat hoists, and boathouses are exempted from the OHWM setback by rule because they depend on a waterfront location.

Piers: Counties may allow piers and wharves in the shoreland setback area for docking watercraft or for loading and unloading cargo or passengers, if the piers or wharves comply with applicable state laws. A pier extends out from the shoreline; a wharf is parallel to the shore. Any construction with dimensions or accessories beyond what are reasonably necessary for these purposes is prohibited in the setback area. Decks may not be constructed in the setback area simply because they are connected to or used as part of a pier or wharf. In addition to the shoreland regulations, other DNR rules apply to piers and wharves. Communities have the authority under ss. 30.13 (2) and 281.31, Wis. Stats., to adopt provisions in their ordinances with standards for pier and wharf construction, including location and number of berthing spots.

Boat Hoists: Boat hoists are allowed within the shoreland setback area. Oftentimes they are stored temporarily on land during the winter season to prevent ice damage.

Dry Boathouses: Section NR 115.03 (1), Wis. Admin. Code, defines a boathouse as a “permanent structure used for the storage of watercraft and associated materials and includes all structures which are totally enclosed, have roofs or walls, or any combination of these structural parts.” Any construction beyond that reasonably needed for the storage of watercraft and associated materials is prohibited in the setback area. Boathouses may not be used for human habitation.



Figure 3.3 Boat hoist

In order to limit boathouses to suitable sites and discourage their use as general living quarters, many counties have adopted additional regulations for boathouses, including:

- maximum floor area and height requirements;
- prohibitions of roof-top decks, plumbing, heating, and cooking facilities;
- maximum allowable slopes for construction;
- door and window standards;
- minimum roof pitch standards; and
- minimum OHWM setbacks.



Figure 3.4 Dry boathouse

Wet Boathouses: Boathouse construction is prohibited below the OHWM of navigable waters. However, a shoreland zoning ordinance may not prohibit the construction of a single-story boathouse over an authorized slip (waterway enlargement) if the requirements in s. 30.121 (3m), Wis. Stats., are satisfied. Also, shoreland zoning ordinances may not prohibit the construction, repair or maintenance of commercial boathouses below the OHWM if the requirements in s. 30.121 (3w), Wis. Stats., are satisfied. (Section 30.121 (3w), Wis. Stats., was created by the 2003 Wisconsin Act 118.) State statutes and DNR rules also govern the maintenance and repair of nonconforming boathouses which extend beyond the OHWM of navigable waters.



Figure 3.5 Wet boathouse

D. Boat Ramps

Depending on the construction methods used, a boat ramp may meet the definition of a structure. Boat ramps, like piers, boat hoists, and boathouses, depend on a waterfront location. Counties may allow the construction of a boat ramp if a Chapter 30 permit is issued by the DNR. A Chapter 30 permit is required from the DNR if the boat ramp extends below the OHWM. Many communities have adopted construction standards for boat ramps to address erosion control concerns because Chapter 30 permits are not required in all instances. It is recommended that boat ramp standards be included in the filling and grading provisions of shoreland zoning ordinances if a county chooses to allow public or private boat ramps, or both, to avoid any confusion.

E. Stairways, Walkways, and Lifts

Although stairways, walkways and lifts are not specifically exempted from the OHWM setback by ch. NR 115, Wis. Admin. Code, counties may permit them in the shoreland setback area if necessary to provide pedestrian access to the shoreline and if they comply with construction guidelines suggested by DNR. This policy acknowledges a riparian property owner's right of access to the shoreline for the purpose of navigation.

County shoreland zoning ordinances may be amended to allow the construction of a stairway, walkway, or lift in the shoreland setback area when such a structure is essential to provide pedestrian access to the shoreline because of steep slopes or rocky, wet, or unstable soils. The

following standards should be incorporated into the ordinance:

- there are no other locations or facilities on the property that allow adequate access to the shoreline;
- only one stairway or one lift is allowed per property, not both, except where there is an existing stairway, a lift may be mounted onto, or constructed immediately adjacent to, the existing stairway;
- such structures should be required to be placed on the most visually inconspicuous route to the shoreline and should be required to avoid environmentally sensitive areas;
- vegetation, which stabilizes slopes or screens structural development from view, should not be allowed to be removed;
- structures should be required to be screened by vegetation and colored so as to be inconspicuous when viewed against the shoreline;
- canopies, roofs, and sides should be prohibited. Open railings may be allowed where required for safety;
- a maximum width of four (4) feet (outside dimension) should be allowed for stairways, walkways, and lifts;
- landings may be allowed when required for safety purposes and should not be allowed to exceed 40 square feet. Attached benches, seats, tables, etc. should be prohibited; and
- stairways, walkways, and lifts should be required to be supported on piles or footings. Any filling, grading, or excavation that is proposed should be required to meet the requirements of the ordinance.

F. Decks, Patios, Gazebos, and Similar Structures

A recent statutory change allows the construction of open or screened structures, such as decks, patios and gazebos, within the shoreland setback area if statutory criteria are satisfied. Section 59.692 (1v), Wis. Stats., requires counties to issue special zoning permission if all of the following criteria are satisfied:

- the part of a structure that is nearest to the water is located at least 35 feet landward from the OHWM;
- the total floor area of all of the structures in the shoreland setback area of the property will not exceed 200 square feet. In calculating this square footage, boathouses shall be excluded;
- the structure that is the subject of the request for special zoning permission has no sides or has open or screened sides; and
- the county must approve a plan that will be implemented by the owner of the property to preserve or establish a vegetative buffer zone that covers at least 70% of the half of the shoreland setback area that is nearest to the water.

To calculate the total floor area of structures within the shoreland setback area, stairways, walkways, and lifts constructed to provide pedestrian access to the shoreline where steep slopes or rocky, wet, or unstable soils are present should not be included.

If there is an existing nonconforming structure that is partly or entirely located within 75 feet of the OHWM, the floor area of the portion of the structure within the shoreland setback area must be included when calculating the total floor area of all structures in the shoreland setback

area. For instance, if the portion of a nonconforming building located within the shoreland setback is more than 200 square feet, the property owners would not be able to construct a new deck, patio, or gazebo within the shoreland setback area, because the 200 square foot cap is exceeded. The statute requires the square footage of all structures in the shoreland setback area, except boathouses, to be tallied. Therefore, most property owners whose home is partly or entirely located within the shoreland setback area will be unable to take advantage of the special zoning permission that s. 59.692 (1v), Wis. Stats., provides.

G. Fences

Fences are structures and should generally meet the OHWM setback; however, many counties have developed standards that allow open fences within the shoreland setback area. Solid fences are not allowed in shoreland setback area because of the potential adverse impacts on the objectives of shoreland zoning.

Open fences to enclose pastures and other farmlands should be allowed within the shoreland setback area if the standards in ch. 90, Wis. Stats., are met. (Chapter 90 requires adjoining landowners to maintain partition fences if either of them uses their land for farming or grazing.)

There is no specific exemption in ch. 30, Wis. Stats., that authorizes the placement of fences in navigable waters. However, since ch. 90, Wis. Stats., requires fences around farmland, as a practical matter, smooth wire fences are generally allowed in or over navigable waterbodies if the wire is marked with flags or warning signs, and the property owner provides a portage or swinging gate if the waterway is used for navigation or for any incidents of navigation, such as fishing.

H. Agricultural Structures

Structures associated with new or existing agricultural facilities, such as structural nonpoint pollution control projects, must meet OHWM setbacks. If a project is proposed within the shoreland setback area, a variance must be requested. Alternative locations should be investigated as opposed to requesting a variance for a location within the shoreland setback area.

To grant a variance, the Board of Adjustment must find that the statutory criteria are met. It is not an easy standard for these types of projects to pass, because in most cases, there are alternative solutions available which do not require a variance.



Figure 3.6 Nonconforming barn

3.13 TREES AND SHRUBBERY

Shoreline vegetation provides fish and wildlife habitat, controls erosion, reduces adverse water quality impacts of land activities, and enhances natural scenic beauty. Limits on vegetation removal help to create a buffer between development and the water. Properly designed and maintained, a buffer can help protect water from the physical, chemical, hydrological, and visual impacts of development.

A. General Standards

Section NR 115.05 (3)(c) 1, Wis. Admin. Code, states that in the strip of land 35 feet wide inland from the OHWM, no more than 30 feet in any 100 feet may be clear-cut. This provision does

not apply to removal of dead, diseased, or dying trees and shrubbery. In shoreland areas more than 35 feet inland, tree and shrubbery cutting shall be governed by consideration of the effect on water quality and consideration of sound forestry practices and soil conservation practices.

B. Alternative Cutting Plans

Some counties have ordinance provisions to allow submission of an alternative cutting plan allowing greater cutting. These plans should be permitted as a conditional use or special exception so the plan may be adapted to site-specific concerns, while still achieving an effective buffer between development and the water. Conditions of the permit may include, but are not limited to:

- use of practices in Wisconsin's Forestry Best Management Practices for Water Quality;
- submission of a bond to guarantee performance of the planned tree or shrubbery replacement;
- preservation of existing vegetation screens;
- replanting to screen development;
- tapering view corridors;
- thinning trees instead of clear-cutting; and
- minimizing runoff and erosion.

C. Maintenance of Drainage Ditches

Land adjacent to a farm drainage ditch with no previous stream history or that was a non-navigable stream before ditching is exempt from county shoreland zoning if the land adjacent to the farm drainage ditch is maintained in non-structural agricultural uses and is not adjacent to a natural navigable stream or river.

In addition, ch. 88, Wis. Stats., establishes standards for drainage districts and the construction, maintenance and improvement of drains. If shoreland zoning applies to a navigable drainage ditch in a drainage district (see Section 3.51 D of this chapter for more information), trees and shrubs may be allowed to be cut along the banks of the ditch to maintain the “drain” in compliance with the requirements of ch. 88, Wis. Stats. The vegetation removal must be limited to the minimum necessary to maintain the ditch as directed in the drainage district’s maintenance plan.



Figure 3.7 Drainage ditch

A variance should not be issued for maintenance of navigable ditches in drainage districts. Instead, counties with drainage districts should adopt permit provisions to facilitate the permitting of such activities.

D. Road Right-of-Way Clearing

Section 66.1037, Wis. Stats., (as affected by 2003 Wisconsin Act 214, effective January 1, 2005), provides that the unit of government that controls and maintains a highway “shall remove, cut or trim or consent to the removing, cutting or removal of any tree, shrub or vegetation in order to provide safety to users of the highway.” If the cutting of the vegetation within 35 feet of the OHWM of a navigable waterbody is done to make a road safe for the public to use, the

vegetation cutting authorized by s. 66.1037(1), Wis. Stats., would take precedence over the requirements of the county shoreland zoning ordinance.

Generally, to keep roads safe for public use, vegetation cutting to create a “visual clearance triangle” where two or more roads intersect is allowed, and in some circumstances, it may also be necessary to cut vegetation in order to have room for snow plows to move snow off of the surface of the road. However, ss. 66.1037(1) and 82.03(5)(b), Wis. Stats. as affected by 2003 Wisconsin Act 214 (and the cases that interpret these statutes), do not authorize towns or other governmental units to cut roadside vegetation for reasons other than to keep the roads safe for public use.

E. Utility Easement Clearing

Removal or pruning of vegetation along utility easements should be allowed within the shoreland zone, consistent with the need for operation of public utilities.

F. Dam Maintenance

Consistent with the need to maintain dams pursuant to s. NR 333.07 (3)(a.), Wis. Admin. Code, and ch. 31, Wis. Stats., vegetation removal activities should be allowed in the shoreland zone when necessary to maintain dams.

3.14 FILLING AND GRADING

Section NR 115.05 (3)(d), Wis. Admin. Code, addresses filling, grading, lagooning, dredging, ditching and excavating that may be permitted in the shoreland zone. Examples of these activities include building site preparation, grading for shore stabilization, agricultural drainage and conservation practices, and road construction.

A. General Standards

Filling, grading, lagooning, dredging, ditching and excavating may be permitted only in accordance with the provisions of shoreland-wetland zoning, the requirements of ch. 30, Wis. Stats., and other state and federal laws, where applicable. Such activities must be done in a manner that minimizes erosion, sedimentation, and impairment of fish and wildlife habitat.

B. Retaining Walls

Depending upon the construction methods that are used, retaining walls must generally be regulated as structures under the current provisions in ch. NR 115, Wis. Admin. Code. If retaining walls are not regulated as a structure, they should be regulated in the filling and grading portion of the ordinance. Retaining walls should only be permitted in the shoreland setback area if they are necessary to control on-going erosion, and other non-structural erosion control methods will not work.

Retaining walls, rip-rap and other shore protection structures that are proposed to be constructed to prevent shoreline erosion and are located below the OHWM of a waterbody must be authorized by the DNR under s. 30.12 (3)(a), Wis. Stats.



Figure 3.8 Retaining walls

C. Beaches

Installation of sand blankets, pea gravel or other materials to create a beach area requires a DNR Chapter 30 permit if the materials will be placed below the OHWM of the waterbody. Counties should regulate the creation of beach areas in their shoreland zoning ordinances, regardless of whether the material will be placed above or below the OHWM. The most appropriate place in the ordinance would be in the filling and grading provisions. Counties may prohibit the creation of new beaches or establish setback requirements and size limits on man-made beaches.



Figure 3.9 Beach

When a county has beach provisions in place and materials are placed above the OHWM, but wash into the waterbody, the property owner can be issued a Notice of Violation by the county for violating the terms of filling or grading permit and be required to restore the site.

3.15 NONCONFORMING STRUCTURES

Chapter NR 115, Wis. Admin. Code, primarily regulates the construction of new and replacement structures. However, it also requires counties to adopt regulations that apply to nonconforming structures, as well as nonconforming uses, consistent with the provisions in s. 59.69 (10)(a), Wis. Stats.

The authority to regulate nonconforming structures is found in the statutes that give communities the authority for general zoning, as well as shoreland zoning. Section 59.69 (4), Wis. Stats., authorizes counties to adopt general zoning and specifies that, in addition to regulating and prohibiting uses in zoning districts, counties are authorized to “regulate and restrict” the location and size of buildings and other structures. Section 62.23 (7), Wis. Stats., which authorizes the adoption of zoning by cities and villages, includes a similar broad grant of zoning power to regulate the size and location of buildings and other structures.

Court decisions have held that the power to “regulate and restrict” necessarily includes the power to prohibit or regulate changes to existing nonconforming buildings.

Section 59.692, Wis. Stats., requires counties to adopt shoreland zoning ordinances and authorizes the adoption of floodplain zoning ordinances that are required by s. 87.30, Wis. Stats., and provides that “(e)xcept as otherwise specified, all provisions of s. 59.69 apply to ordinances and their amendments enacted under this section.”



Figure 3.10 Nonconforming residence

Sections 59.69, 59.692, 62.23 and 61.35, Wis. Stats., give communities broad powers to regulate the location and size of buildings and other structures, including those that were in existence at the time that an ordinance or ordinance amendment was adopted, not just new construction. The constitutionality of regulating pre-existing uses and pre-existing structures under a zoning ordinance has been upheld numerous times by federal and state courts, beginning with court decisions in the 1920’s and 1930’s.

Sections 59.69 (10)(a) and 62.23 (7)(h), Wis. Stats., impose limits on the authority of communities to regulate nonconforming uses. However, the fact that nonconforming structures with conforming uses are not specifically mentioned in these sections of the statutes only means that there are no statutorily imposed limits on how communities can regulate nonconforming structures with conforming uses.

A. General Standards

Section 59.69 (10)(a), Wis. Stats., and s. NR 115.05 (3)(e), Wis. Admin. Code, require counties to allow the continuation of the lawful use of a building, structure or property, existing at the time an ordinance or ordinance amendment takes place, which is not in conformity with the provisions of the ordinance or amendment, including the routine maintenance of such a building or structure. Many counties utilize the “50% rule,” under which the alteration or structural repair of, or addition to, a nonconforming structure, over the life of the building or other structure, may not exceed 50% of the equalized assessed value of the building or other structure as shown in Table 3.1 *Example 50% Rule for Limited Expansion of Nonconforming Structures* below. In addition, s. 59.69 (10)(a), Wis. Stats., provides that the continuance of the nonconforming use of a temporary structure may be prohibited and if a nonconforming use is discontinued for a period of 12 months, any future use of the building, structure or property shall conform to the ordinance.

The statutes clearly allow counties to use a “50% rule” to regulate nonconforming buildings and premises. While a county may choose to use an alternative method to regulate nonconforming structures, common law in Wisconsin, as well as the policies and principles of zoning, require that shoreland zoning ordinances restrict the amount of structural repairs and structural alterations that property owners may make to nonconforming structures. The intent is to limit the life of nonconforming structures and to eventually eliminate them and replace them with conforming structures once they have reached the end of their useful life. Alternatives to the “50% rule” are discussed more in part D of this section.

While counties have the option of using the “50% rule”, s. 62.23 (7)(h), Wis. Stats., requires cities and villages to use a “50% rule,” except that under s. 30.27 (2)(c), Wis. Stats., cities and villages in Lower St. Croix Riverway may use other alternatives to regulate nonconforming structures in their zoning ordinances.

Example 50% Rule for Limited Expansion of Nonconforming Structures					
Year	Current value of structure	Value of proposed addition	% Proposed addition is of current value	% Lifetime additions are of current value	Addition allowed (less than 50%)
1950	\$10,000	(new)			
1970	\$40,000	\$10,000	25%	25%	Yes
1980	\$80,000	\$16,000	20%	45%	Yes
1992	\$110,000	\$16,500	15%	60%	No

Table 3.1 Example 50% Rule for Limited Expansion of Nonconforming Structures

B. Structural Repairs

In *Marris v. City of Cedarburg*, 176 Wis.2d 14, 498 N.W.2d 842 (1993), the Wisconsin Supreme Court provided guidelines to distinguish “structural repairs” from “non-structural repairs”. It is important to point out, however, that the Court qualified their discussion of “structural repairs” with the statement that: “(a)ny discussion of the meaning of the phrase ‘structural repairs’ must be in terms of the purpose of this type of ordinance, the language of the ordinance, and the proposed improvement.” To the extent that an ordinance’s language is similar to that of Cedarburg, the ruling in *Marris* will be controlling.

The Court, however, did try to establish some guidelines for judging proposed improvements: “We construe structural repairs in this ordinance to include:

- work that would convert an existing building into a new or substantially different building [which the DNR interprets to include work that expands a nonconforming structure].
- work that would affect the structural quality of the building.
- proposed improvements that would contribute to the longevity or permanence of the building.”

C. Ordinary Maintenance and Repairs

While the term “ordinary maintenance and repair” is not defined in ch. NR 115, Wis. Admin. Code, s. NR 116.15 (1)(a), Wis. Admin. Code, which applies to floodplain zoning, provides that:

“Ordinary maintenance repairs are not considered structural repairs, modifications or additions; such ordinary maintenance repairs include internal and external painting, decorating and paneling, the replacement of doors, windows and other non-structural components; and the maintenance, repair, or replacement of private sewage systems, water supply systems, or connections to public utilities.”

In light of the *Marris* decision, county shoreland zoning ordinances should include a definition that is the same or very similar to the definition found in ch. NR 116, Wis. Admin. Code, if the county uses the phrase “ordinary maintenance and repair.”

Other actions that are commonly considered ordinary maintenance and repairs, include:

- re-roofing with new shingles or other roofing materials;
- replacement of existing windows or doors;
- painting or re-siding;
- repairs to plumbing and electrical systems;
- installation or replacement of insulation;
- installation or replacement of heating or air conditioning unit;
- installation or replacement of on-site sewage waste disposal system;
- rewiring to comply with electrical codes; and
- alterations, repair or maintenance done under emergency conditions to preserve or protect life or property.

In *Morris*, the Court also established that “an owner is permitted to modernize facilities.” For instance, a property owner could add acoustical ceilings or install heating, electricity, plumbing, or insulation, since these actions can be characterized as efforts to modernize and improve the appearance or efficiency of a structure. The Court also held that “repairs that are reasonably necessary to prevent deterioration” are permissible and should not be considered “structural repairs,” because “(i)t is in the community’s interest that buildings be maintained in good, safe and sanitary condition.”

D. Alternative Methods to Regulate Nonconforming Structures

As previously stated, counties have the option of adopting alternative methods of regulating nonconforming structures, other than the “50% rule”, to bring about the ultimate compliance of nonconforming structures.

One option available to counties is to allow alterations and repairs that do not increase the floor area or the footprint of the structure. However, if any work is proposed which would result in an increase of the size of the structure, the structure must be brought into compliance. Some counties prohibit expansion of those nonconforming structures closest to the water and limit expansion of structures further away from the water to a percentage of the floor area or enclosed space. When applying this method, it is important to clarify how the floor area or enclosed space is measured. Alternatively, a community may set a cap on the total size of a nonconforming structure. These alternatives are shown in Table 3.2 *Expansion of Nonconforming Structures*.

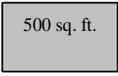
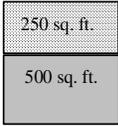
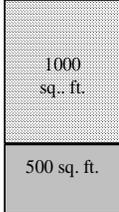
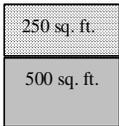
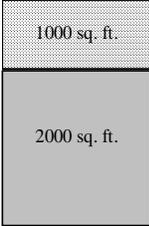
Expansion of Nonconforming Structures Examples of Alternative Regulation Methods Aerial View				
	Existing homes/ No expansion	Option 1 50% area expansion cap	Option 2 1500 sq. ft. cap	Option 3 50% area expansion cap and 1500 sq. ft. cap
Residence A	 <p>500 sq. ft.</p> <p>No change in square footage</p>	 <p>250 sq. ft.</p> <p>500 sq. ft.</p> <p>750 square feet total</p>	 <p>1000 sq. ft.</p> <p>500 sq. ft.</p> <p>1500 square feet total</p>	 <p>250 sq. ft.</p> <p>500 sq. ft.</p> <p>750 square feet total</p>
Residence B	 <p>2000 sq. ft.</p> <p>No change in square footage</p>	 <p>1000 sq. ft.</p> <p>2000 sq. ft.</p> <p>3000 square feet total</p>	 <p>2000 sq. ft.</p> <p>Existing structure exceeds cap No change in square footage</p>	 <p>2000 sq. ft.</p> <p>Existing structure exceeds cap No change in square footage</p>

Table 3.2 Expansion of Nonconforming Structures

Another method limits alterations to a percentage of the structural components of a structure. If this method is used, it is important to clarify what members of a structure are considered structural components. Combinations of any of the methods discussed above are also possible.

E. Relocation of Nonconforming Structures

If a property owner proposes relocating a nonconforming structure, it must be moved to a compliant location. In *Yorkville v. Fonke*, 3 Wis.2d 371, 378, 88 N.W.2d 319 (1958), the Wisconsin Supreme Court found that a nonconforming use is not ambulatory and can not be extended to new property. The landowner can not shift the use to another area and still claim nonconforming use status.

F. Reconstruction of Nonconforming Structures

If a property owner proposes demolishing a nonconforming structure and rebuilding a new structure in the same nonconforming location, a county may not permit the reconstruction in the absence of a variance (assuming that s. 59.692 (1s), Wis. Stats., is not applicable), because the special protections conferred to nonconforming structures are lost once that structure is demolished. The reconstruction of nonconforming structures may only be allowed in compliant building locations.

However, there is a statutory exemption for nonconforming structures that are damaged or destroyed by violent wind, vandalism, fire or flood after October 14, 1997. Also, ch. NR 118, Wis. Admin. Code, Lower St. Croix Riverway zoning standards, has been amended to allow the reconstruction of nonconforming structures as long as the requirements in s. NR 118.08(2)(a), Wis. Admin. Code, are satisfied.

Section 59.692 (1s), Wis. Stats., states that an ordinance enacted under this section may not prohibit the restoration of a nonconforming structure if the structure will be restored to the size, location and use that it had immediately before it was damaged or destroyed by violent wind, vandalism, fire or flood after October 14, 1997, or impose any limits on the costs of the repair, reconstruction or improvement of such a structure.

Section 59.692 (1s)(b), Wis. Stats., allows a structure to be reconstructed larger than the size it was immediately before the damage or destruction occurred if necessary for the structure to comply with applicable state or federal requirements.

Model ordinance language addressing the requirements of s. 59.692 (1s), Wis. Stats., can be found in the 1997 DNR publication [Shoreland Zoning Resource Guide: An Annotated Model Shoreland Zoning Ordinance](#).

3.20 LAND DIVISION REVIEW

Most counties have a separate subdivision ordinance to review land divisions throughout the county, including shoreland areas. Legal land divisions may be recorded by certified survey map or by formal plat review as required by state statutes. Section 236.45, Wis. Stats., provides standards for local subdivision regulations.



Figure 3.11 Subdivision

Section NR 115.05 (4), Wis. Admin. Code, requires each county to review all land divisions in shoreland areas that create three or more parcels or building sites of five acres or less within a five year period. This standard is different than the definition of subdivision found in s. 236.02 (12), Wis. Stats.

Communities should adopt detailed design criteria in their subdivision ordinances that consider the following factors:

- hazards to the health, safety, or welfare of future residents;
- proper relationship to adjoining areas;
- public access to navigable waters, as required by law;
- adequate storm drainage facilities; and
- conformity to state law and administrative code provisions, and the requirements of local ordinances.

3.30 SANITARY REGULATIONS

Section NR 115.05 (5), Wis. Admin. Code, requires each county to adopt sanitary regulations for the protection of human health and the preservation and enhancement of water quality.

Private well construction must conform to standards in ch. NR 812, Wis. Admin. Code. Currently, actual administration of a well code is not mandatory for counties, but they have the option of adopting certain private well construction regulations. Counties interested in assuming such responsibility should contact the private water supply specialist in their local DNR office.

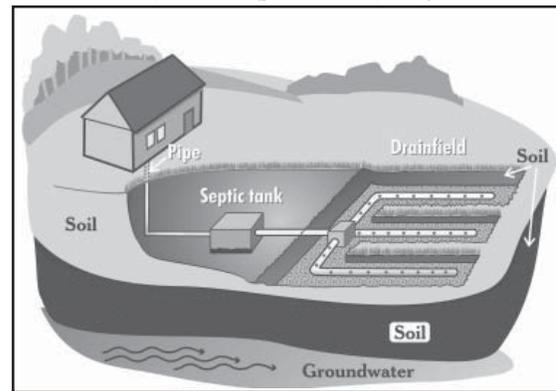


Figure 3.12 Septic system

Where public sewage collection and treatment systems are not available, private on-site waste treatment systems must meet the requirements of state law and local private sewage system ordinances.

3.40 ADMINISTRATION OF SHORELAND ZONING ORDINANCES

Section NR 115.05 (6), Wis. Admin. Code, requires ordinance provisions on the administration and enforcement of the shoreland zoning ordinance. This section will discuss those provisions in more detail.

3.41 ORDINANCE ADOPTION AND AMENDMENT

When adopting or amending a shoreland zoning ordinance, the procedure is the same as the provisions in s. 59.69, Wis. Stats., with the following additional requirements:

- **Public hearings:** At least 10 days prior to the public hearings, counties are required to provide the appropriate local DNR office with written notice of public hearings on ordinance text and map amendments (s. NR 115.05 (6)(h), Wis. Admin. Code).;
- **Adoption of ordinance amendments:** Within 10 days after adoption of ordinance

text or map amendments, the county must also provide the appropriate local DNR office with copies of the adopted text and map amendments (s. NR 115.05 (6)(h), Wis. Admin. Code). [Note: maps are part of the ordinance, just like the ordinance text.]; and

- **Town approval:** Ordinances and ordinance amendments do not require approval, and are not subject to disapproval, by any town or town board (as provided by s. 59.692 (2)(a), Wis. Stats.).

3.42 PERMIT SYSTEM

A permit system allows applicants to know exactly what is expected of them and provides the zoning administrator with a method to ensure that the shoreland zoning regulations are being properly followed. Section NR 115.05 (6)(c), Wis. Admin. Code, requires counties to provide for a system of permits for all new construction, reconstruction, structural alteration or moving of buildings and other structures in the shoreland zone. The county zoning administrator is required to keep a copy of all applications in the county zoning office's files.

Most activities can be permitted with administrative permits in shoreland zoning ordinances. These activities are allowed as “as-of-right” in the ordinance, subject to obtaining an administrative permit in compliance with clear and objective standards and criteria in the ordinance.

3.43 SPECIAL EXCEPTION OR CONDITIONAL USE PERMITS

Special exception or conditional use permits should be reserved for unique situations where some discretion must be exercised in applying more general, somewhat subjective standards. The ordinance must have standards and criteria for special exceptions and conditional use permits to avoid arbitrary decisions and to give applicants an understanding of the criteria that will be used to decide if a special exception or conditional use permit will be granted.

As with ordinance amendments, counties must provide written notice to the appropriate DNR office at least 10 days prior to the public hearing and a copy of the decision within 10 days after a decision is made to grant or deny a special exception or conditional use permit.

3.44 VARIANCES

In its recently issued decisions in *Ziervogel v. Washington County BOA*, 2004 WI 23, 269 Wis.2d 549, 676 N. W.2d 401, and *State v. Waushara County BOA*, 2004 WI 56, 271 Wis.2d 547, 679 N. W.2d 514, the Wisconsin Supreme Court held that a distinction should be made between “use variances” and “area variances” when Zoning Boards of Adjustment/Appeals hold hearings on variance applications.

A **use variance** permits a property owner to use their property in a manner that is not allowed under the county's shoreland or floodplain zoning ordinance. An example of a use variance would be the construction of a new residence in a floodway, where ch. NR 116, Wis. Admin. Code, prohibits the construction of new residential structures.

An **area variance** relaxes a dimensional standard such as a setback, frontage, lot or height requirement. An example of an area variance would be a reduction in a sideyard setback for the placement of a porch or room addition.

A variance is not necessarily an “area variance” simply because an applicant is seeking a variance from a standard that is described in dimensional terms. Wisconsin judges and Supreme Court justices have stated in several recent opinions that applications for variances from standards that are described in dimensional terms, such as variances from ordinance provisions that prohibit residential structures in floodfringe areas unless the basement is at or above the RFE, may be “use variances.”

Additionally, to determine if a requested variance is an area variance, the degree of the deviation from the dimensional standards for which a variance is sought should also be considered. Would the variance “permit wholesale deviation from the way in which the land in the zone is used?” In the words of the Wisconsin Supreme Court, “While area variances provide an increment of relief (normally small) from a physical dimensional restriction such as building height, setback, and so forth, use variances permit wholesale deviation from the way in which land in the zone is used.” *Ziervogel*, ¶23. For example, allowing significantly reduced setbacks could have the same effect as changing the zoning from a residential zoning district requiring relatively large setbacks and open space areas to another residential zoning district that requires minimal setbacks and open space.

Authority to grant variances from shoreland zoning ordinance provisions is given to the Board of Adjustment in ss. 59.692 (4)(b) and 59.694 (7)(c), Wis. Stats. See also s. NR 115.05 (6)(e), Wis. Admin. Code. To qualify for a variance, an applicant must demonstrate that the statutory variance criteria have been satisfied. A brief discussion of the variance criteria follows and for a more in-depth discussion, please refer to the [Zoning Board Handbook](#) available from The Center for Land Use Education at the University of Wisconsin – Stevens Point and at <http://www.uwsp.edu/cnr/landcenter/pubs.html>.

As with ordinance amendments and special exceptions, counties must provide to the appropriate local DNR office written notice at least 10 days prior to the public hearing and a copy of the decision within 10 days after a decision is made to grant or deny a variance request.

A. General Standard

Under the authority of s. 59.694 (7)(c), Wis. Stats., Boards of Adjustment may “authorize upon appeal variances from the terms of the ordinance that will not be contrary to the public interest, where, owing to special conditions, a literal enforcement of the provisions of the ordinance will result in unnecessary hardship, and so that the spirit of the ordinance shall be observed and substantial justice done.”

B. Unnecessary Hardship

For a “use variance,” the “**no reasonable use in the absence of a variance**” test from the Supreme Court’s earlier decision in *State v. Kenosha County Board of Adjustment* 218 Wis.2d 396, 577 N. W.2d 813 (1998), (which defined the statutory “unnecessary hardship” criteria to mean that a variance may only be issued if there is no reasonable use for the property in the absence of a variance) should be applied to determine if there is unnecessary hardship.

It should be noted that in the *Waushara County* case, the Supreme Court explained that there was no need to overrule the *Kenosha County* decision because the Court’s holding in the *Kenosha County* case was “wholly consistent with the reasoning regarding a focus on the purpose of the

ordinance set forth in *Snyder v. Waukesha County Zoning Board*, 74 Wis.2d 468, 247 N. W.2d 98 (1976) and *State v. Outagamie County Board of Adjustment*, 251 Wis.2d 484, 628 N.W.2d 736 (2001) .” The County stated that “it is evident that this court has consistently noted that the purpose of a zoning ordinance should not be lost sight of when determining whether the variance requested should be granted.” *Wausara County*, ¶ 32.

For an “area variance”, the criteria quoted below in the *Ziervogel* decision from the *Snyder* decision apply:

“When considering an area variance, the question of whether unnecessary hardship . . . exists is best explained as ‘whether compliance with the strict letter of the restrictions governing area, setbacks, frontage, height, bulk or density would unreasonably prevent the owner from using the property for a permitted purpose or would render conformity with such restrictions unnecessarily burdensome.’ ”

The first criterion for the issuance of area variances in the language quoted above from the *Snyder* decision is whether compliance with the ordinance “**would unreasonably prevent the owner from using the property for a permitted purpose.**” This first criterion is only satisfied if requiring compliance with the ordinance would unreasonably prevent the owners from using the property for **any** permitted purpose. This is true because the Wisconsin Supreme Court has held that property owners are not entitled to the “highest and best use” of their property and are not entitled to a variance to allow one of a number of possible uses if there is at least one reasonable use that does not require a variance.

The second criterion for the issuance of area variances in the language quoted from the *Snyder* decision is whether compliance with the ordinance “**would render conformity with such restrictions unnecessarily burdensome.**” It is this portion of the area variance criteria from the *Snyder* decision that provides Boards of Adjustment with greater discretion in area variance cases than they had under the *Kenosha County* “unnecessary hardship” test. To determine if this second criterion is satisfied, variance requests must, in the words of Justice Sykes in the *Ziervogel* decision, be “evaluated in light of the purpose of the zoning ordinance and the public interests at stake.” “The board must determine whether a hardship unique to the property has been demonstrated and whether the relief requested is consistent with the public interest such that the variance should be granted, or whether a variance would subvert the purpose of the zoning restriction to such an extent that it must be denied.” *Ziervogel*, ¶¶ 33-34. Under this analysis, even if a hardship unique to the property has been demonstrated by the applicants, the variance must still be denied if the granting of the variance will significantly undermine the purpose of the zoning restriction at issue.

The Court apparently concluded that the burden on the property owner in the *Kenosha County* case was not “unnecessarily burdensome” (that is, the burden of not being able to build a deck on the lakeside of the existing home was necessary to achieve the purposes of the 75 foot shoreland setback). It was only after the Court considered the purpose of the shoreland setback and the burden on the property owner that the Court turned to the second part of the *Snyder* definition: whether compliance with the ordinance would unreasonably prevent the owner from using the property for a permitted purpose (in other words, would the property

have no reasonable use in the absence of a variance).

C. Hardship Due to Unique Property Limitations

The hardship must be the result of unique limitations of the property that prevent compliance with the ordinance. The limitation must be a physical feature of the property, such as a wetland area, steep slope or rock outcropping. This criterion must be met for both use variances and area variances.

Property limitations must be unique to the property in question. If it is a condition shared by a number of properties, the correct solution is to amend the ordinance to address the problem rather than issuing variances.

Circumstances of an applicant or convenience for the property owner should not be considered when reviewing variance applications. In *Snyder*, the Wisconsin Supreme Court found that “(g)rowth of a family and personal inconvenience do not constitute practical difficulties or unnecessary hardship which justify a variance. It is not the uniqueness of the plight of the owner, but the uniqueness of the land which is the criterion.” The “desire” to expand a house on a lake because of a growing family or to build a new, larger garage, no matter how strong, is not a “need”, and the denial of a desire is not a hardship.

D. No Harm to Public Interests

The absence of harm to public interests, like the existence of a hardship, must be found by the Board and must be supported by evidence in the record. *Arndorfer v. Sauk County Board of Adjustment*, 162 Wis.2d at 255-56. This criterion must be met for both use variances and area variances.

To determine the effects of a variance on public interests, the Board should review the purpose statement of the ordinance and related statutes to identify public interests. The purpose statement of the ordinance should provide guidance on the objectives of the ordinance. The Wisconsin Supreme Court has stated that “(t)he basic purpose of a shoreland zoning ordinance ‘is to protect navigable water and the public rights therein from the degradation and deterioration which results from uncontrolled use and development of shorelands.’ ” *Just v. Marinette County*, 56 Wis.2d at 10.

When determining impacts on public interests, the review should not be confined to impacts on neighbors, but should take a broad view from a community or even statewide perspective. In addition, support from neighbors for the granting of a variance should not be construed as meaning that there is no adverse impact on public interests.

In shoreland zoning cases, it is not necessary for the DNR to introduce evidence into the hearing record to prove that requiring compliance with shoreland zoning restrictions that were adopted to meet minimum state standards in ch. NR 115, Wis. Admin. Code, is in the public interest. “Rather the burden is shifted to the landowner to present evidence that the desired variance is not contrary to the public interest furthered by the shoreland ordinances.” *State v. Winnebago County*, 196 Wis.2d 836 at 846-847, 540 N. W.2d 6 (1995).

3.45 STAFF REPORTS

Zoning staff should prepare a report to provide the Board of Adjustment or Planning and Zoning Committee with all the factual data related to an application. The staff report should be delivered, along with the agenda, to all members before the meeting. The staff should present, and answer questions on, the contents of the report early in the meeting so citizens can comment in light of the staff information.

It is crucial for the staff report to include any information that may be relevant to the permit or variance application in question that may not be supplied by the applicant, including an explanation of the purposes of the zoning provision at issue. For instance, if a property owner has three adjacent lots and can build in compliance with the standards if all the lots are treated as one parcel, that information should be included in the staff report, if it is not in the application.

The staff report may also need to include a diagram illustrating the applicable setbacks for a lot and the resulting buildable area. In some situations, applicants state that there is no place else to build on the lot, other than where they wish to build. By providing a diagram as part of the staff report, the Board or Committee can objectively weigh the applicant's statements and determine if there are other options.

The staff report should recommend approval or denial of the application. For variance applications, the staff report may also recommend approval of a different variance than the variance applied for, if the staff believe that the applicant will suffer unnecessary hardship if no variance is granted, but also believe that the applicant is asking for more than the minimum relief necessary to allow reasonable use of the property. If approval is recommended, the report can also include conditions for approval for the special exception, conditional use, or variance.

The staff report and application materials are public information and citizens may review them at the zoning office prior to the public hearing. It is also helpful to forward the staff report to the local DNR staff person that is involved in the case.

3.46 ORDINANCE ENFORCEMENT

Section NR 115.05 (6)(d), Wis. Admin. Code, requires shoreland zoning ordinances to provide for regular inspections of permitted work to ensure compliance with the terms of the ordinance. In addition, s. NR 115.05 (6)(j), Wis. Admin. Code, requires that ordinances shall establish appropriate penalties for violations of provisions of the ordinance, including forfeitures. Compliance with the ordinance shall be enforceable by the use of injunctions to prevent or abate a violation, as provided for in s. 59.69 (11), Wis. Stats.

A. Inspections

In order to enforce permit conditions and shoreland ordinance provisions, the county and the DNR have the authority to inspect property and buildings to determine if the landowner is in compliance. However, either the permission of the property owner or a special inspection warrant must be obtained before a county employee or DNR employee goes onto private property to conduct an inspection. Permit application forms that the property owner is asked to sign should include a provision to give permission to zoning staff to inspect permitted projects in progress, so that the access issue is taken care of at the beginning of the process.

When a violation has occurred without a signed permit application allowing access to the site, the county can obtain a special inspection warrant under s. 66.0119, Wis. Stats., if the property owner refuses to grant access, or the county can ask the DNR for assistance. It is the responsibility of the DNR to oversee and intervene, where necessary, in local zoning cases to protect navigable waters. This responsibility gives the DNR the authority to seek special inspection warrants, if needed, to conduct investigations to determine whether a shoreland or floodplain ordinance has been violated or whether the county is properly implementing its ordinance. DNR's authority to inspect is found under ss. 281.19 (3) and 281.97, Wis. Stats.

When inspecting a site, factual evidence should be gathered and documented. The evidence should enable comparison between the actual work completed on-site and either the permit provisions or ordinance provisions that were violated.

Evidence gathered should include photographs of the site. With pictures, include the date and time the picture was taken, the direction and distance from the subject matter, and other important information. This information can be crucial at trial. Follow proper rules of evidence, such as keeping a “chain of custody” record for any evidence that is gathered.



Figure 3.13 Reviewing a suspected violation

At the inspection, accurate measurements from all setbacks should also be taken and recorded, including distance from the ordinary high water mark, property lines, rights of way, well and sanitary systems.

B. Correcting Violations

When a violation is discovered, a Notice of Violation (Notice) should be issued. The Notice should, at a minimum, include a description of violation, its location and the ordinance and/or permit provisions that were violated.

The completed Notice, and a “stop-work” order, if necessary, should be posted in a visually conspicuous location. Any contractor working on the violation should be stopped immediately to prevent further violation.

The owner of the property and all known mortgage holders must be notified of the violation. If the property owner is present, the violation and possible remedies should be discussed with him or her. The Notice should still be completed even if the property owner agrees to correct the violation. After discussing the violation with the property owner in person or on the phone, the property owner or their agent should receive a copy of the Notice preferably by certified letter with return receipt requested.

If the property owner is not willing to correct a violation, formal enforcement procedures should be followed. Either a citation or a complaint and summons can be issued, requiring the landowner to appear in court.

If the property owner does not believe they have violated a permit or ordinance provision, they may appeal to the Board of Adjustment, for an interpretation of the ordinance or permit

provision, or they may contest the matter when the enforcement case goes to court.

The property owner may also apply for a variance. In that case, it is important for the property owner to understand the variance criteria. The Board of Adjustment must review the variance request as if the project were still proposed, and not in place. Self-created hardships, such as commencing construction without permits, cannot justify the issuance of a variance by the Board. Only hardships related to the property in question, not the property owner, are to be considered by the Board.

Voluntary correction of violations is preferred to legal actions that entail costly prosecution procedures or enforcement penalties. Settlement agreements are a way of reaching and documenting an agreement between a property owner and the county. The agreement should entail how the violation will be corrected and may include a restoration plan, implementation schedule and maintenance plan. The county may also require bonding to ensure that the violation is corrected as described in the agreement.

If the property owner agrees to correct the violation, the county should be sure to inspect the property to verify the violation has been corrected.

3.50 DETERMINATIONS

When administering shoreland zoning ordinances, there are three basic determinations that zoning staff need to make – navigability, ordinary high water mark, and shoreland zone.

3.51 NAVIGABILITY DETERMINATIONS

If a body of water is found to be navigable-in-fact and is a public waterway, it is subject to shoreland zoning. Wisconsin's lakes and rivers, as public resources, are held in trust for all Wisconsin citizens under the state's public trust doctrine. Based on the state constitution, the public trust doctrine, further defined by case law and statute, declares that all navigable waters are "common highways and forever free", and are held in trust by the State of Wisconsin.

In s. 281.11, Wis. Stats., the Wisconsin State Legislature adopted a statement of policy and purpose, which authorizes the DNR to "serve as the central unit of state government to protect, maintain and improve the quality and management of the waters of the state, ground and surface, public and private." In chs. 30 and 31, and s. 59.692, Wis. Stats., the State Legislature has given DNR duties that are specific to the protection of the public interest in navigable waters.

Shoreland zoning is one method used by the State Legislature to enforce the principles of public trust doctrine and ensure that the public has the ability to, among other things, boat, fish, hunt, ice skate, snowmobile and swim on navigable waters, as well as enjoy the natural scenic beauty of navigable waters, and enjoy the quality and quantity of water that support those uses.

A. General Standards

A waterway is navigable if it has a defined bed and banks, and it is possible to float in a canoe or other small craft at some time during the year on a recurring basis, such as during spring thaw. A waterway that is navigable may be dry during some times of the year.

B. Office Determinations of Navigability

Lakes, ponds and flowages should be presumed to be navigable if they are listed in the “Surface Water Resources” publication, available from the DNR, or if shown on the United States Geological Survey (USGS) quadrangle maps, or other zoning base maps.

Rivers and streams should be presumed to be navigable if they are designated as perennial or intermittent waterways on USGS quadrangle maps.

Previous determinations of navigability can also provide evidence of the navigability of waterways. These determinations may be found in the following sources:

- court declarations of navigability;
- legislative designation of navigable waterways;
- previous navigation-in-fact “shocker surveys,” available at DNR regional offices; and
- previous navigability determinations on file at DNR regional offices.

Note that determinations of non-navigability made before *DeGayner v. DNR*, 70 Wis.2d 936 (1975) may **not** be controlling.

C. Field Determinations of Navigability

The best evidence of navigability is whether a lake or stream can be physically navigated. Using the direction in *DeGayner*, a stream is navigable-in-fact if it is navigable by canoe or other small craft on a reoccurring basis (i.e. annually during spring thaw) and has a discernible bed and banks. Obstacles or interruptions to navigation such as brush, fallen trees, tight meanders, do not make a stream non-navigable. Lewis Creek (subject of *Olson v. Merrill*, 42 Wis. 203, 1977) was found to be navigable-in-fact even in light of the fact that it was (and still is) such a winding, twisting, alder covered creek that the logs being driven down it could not make some of the bends and were continually hanging up in the alders.

When conducting a field determination of navigability, staff should take thorough notes and gather information that will help support the determination, including:

- date of determination;
- size of the boat or canoe, weight of occupants, starting and ending points, and startup and finishing time;
- water level from the top of a bridge, culvert or other permanent reference point;
- water width and depth should be measured at frequent intervals, and particularly at the start and finish of floating;
- relation of the water level to the OHWM (see Section 3.52 below for instructions on finding the OHWM);
- estimated or measured flow;
- any interruptions or obstacles to navigation such as fallen trees, brush, or other materials; and
- photographs, particularly with the navigator in boat at narrow, normal, and obstructed sites.

D. Drainage Ditch Determinations of Navigability

Section 281.31 (2m), Wis. Stats., and s. NR 115.03 (5), Wis. Admin. Code, provide that under

certain circumstances shoreland zoning ordinances do not apply to lands adjacent to farm drainage ditches. Essentially, the statute states that while a ditch may be navigable-in-fact, shoreland zoning will not apply to lands adjacent to the drainage ditch if:

- the lands are not adjacent to a natural navigable stream or river;
- the farm drainage ditch in question was not a navigable stream before ditching; and
- the lands in question are maintained in non-structural agricultural use, i.e., crop cultivation or pasture.

However, shoreland zoning applies to lands adjacent to farm drainage ditches whenever a structural use is proposed, even if the structure is part of an agricultural use. The statutory language regarding farm drainage ditches must be read as an exemption for a particular use of land (agriculture) rather than as an exemption for a waterway or segment of waterway.

For drainage ditches that are navigable-in-fact and are adjacent to lands that are not in non-structural agricultural use, proposals to remove trees or shrubs within 35 feet of the OHWM will generally require a shoreland zoning permit. However, farm drainage ditches that were not a navigable stream before ditching are not the only drainage ditches where some tree and shrub removal should be allowed. Chapter 88, Wis. Stats., establishes standards for drainage districts and the construction, maintenance and improvement of drains. If shoreland zoning applies to a navigable ditch in a drainage district, trees and shrubs should nevertheless be allowed to be cut along the banks of the ditch to maintain the “drain” in compliance with the requirements of ch. 88, Wis. Stats. Floodplain zoning regulations only apply if a ditch is mapped on the floodplain regulatory map, whether or not the ditch is navigable-in-fact. Any proposal for structural use requires a shoreland zoning permit.



Figure 3.14 Drainage ditch

E. Manmade Waterbody Determinations of Navigability

Manmade ponds and other waterbodies may be declared navigable depending on the fact situation. In these cases, contact your local DNR Water Management Specialist for assistance.

3.52 ORDINARY HIGH WATER MARK DETERMINATIONS

The ordinary high water mark (OHWM) forms several important boundaries. It is the dividing line between public and private ownership of land under and abutting natural lakes and is the line from which the shoreland zone and shoreland setbacks are measured.

Chapter 30, Wis. Stats., also requires permits for activities occurring below the OHWM and, in some instances, above it.



Figure 3.15 Ordinary high water mark

A. General Standards

Section NR 115.03 (6), Wis. Admin. Code, defines the OHWM as:

“...the point on the bank or shore up to which the presence and action of surface water is so continuous as to leave a distinctive mark such as by erosion, destruction or prevention

of terrestrial vegetation, predominance of aquatic vegetation, or other easily recognized characteristic. Where the bank or shore at any particular place is of such character that it is difficult or impossible to ascertain where the point of ordinary high-water mark is, resource may be had to the opposite bank of a stream or to other places on the shore of a lake or flowage to determine whether a given stage of water is above or below the ordinary high-water mark.”

B. Documenting the Location of the Ordinary High Water Mark

OHWL determinations are to be made according to the definition in s. NR 115.03(6), Wis. Admin. Code, which reflects the decision in *Diana Shooting Club v. Husting*, 156 Wis. 261 (1914). To document the location of the OHWM:

- check files for previous OHWM determinations on the same waterbody. Also check all existing past water level readings.;
- determine the OHWM using the physical and biological features (indicators) described in subsections C and D below;
- measure the distance of the indicators above or below the water level on the day(s) of observation. The water level on the day(s) of observation should be referenced to an easily identifiable benchmark (one method is to measure down from a culvert or wall to the water level). This benchmark should be carefully described and its exact location recorded, so that it can be found with ease at a future date if needed.;
- find another spot near the first measurement and repeat the process. Take an adequate number of measurements and notes before reaching a conclusion. Elevations of OHWM indicators should generally be within 0.1 feet of each other.;
- tie the OHWM elevation into a benchmark of known elevation. This information could be especially useful when it is necessary to transfer the elevation of an OHWM to an area where there is no distinct mark. If a nearby site does not have a discernible OHWM, then pursuant to *Diana*, the elevation can be transferred to the site where an OHWM determination is needed.



Figure 3.16 Determining an ordinary high water mark

For further assistance, contact the local DNR Water Management Specialist.

C. Biological Indicators of the Ordinary High Water Mark

There are many biological indicators that can be used to determine the location of the OHWM. Final determinations should rely on a combination of several biological and physical indicators and preferably not just one indicator.

Mosses: Mosses that are located on exposed rocks, stumps, tree roots, etc., are usually considered terrestrial and the lowermost elevation of these mosses is a good indicator of the OHWM. Some water mosses (e.g. *Drepanocladus*) form long strings and are aquatic and should not be used as indicators of the OHWM.

Lichen: These indicators should be used with care for determining the OHWM. They should be used them mainly for recent, relatively short duration high water stage indicators. Extended

high water periods eventually will kill and remove various lichen. Types to look for:

- coarse brown lichen – usually lie above extreme high lake stages;
- black – usually removed readily by water inundation;
- orange lichen – intermediate in their susceptibility to water destruction; and
- green lichen – the lowermost elevation of this lichen can indicate the highest water mark in recent years.

Trees: The roots of living trees and shrubs along the shoreline will turn up and away from the water. Exposed bases and roots of older trees with roots growing primarily toward the shoreland on a horizontal plane are usually just above the OHWM if no slumpage has occurred. Tree root indications of OHWM are:

- water roots – willow trees on the bank will put out red-brown water roots. The start of the water roots will be very near the OHWM. Beware of slumpage.;
- pancake roots – birch, maples, tag alder and tamarack will form pancake shaped root mats usually just above the OHWM. Beware of slumpage.;
- pipe elbow roots – birch and maple will curve their roots away from water forming a pipe elbow bend. The bottom of the root as it bends away will be very near the OHWM. Beware of slumpage.

Pollen: Pollen – especially pine pollen – often leaves marks on shore (particularly on large rocks) during spring and early summer. Pollen is not an indicator when considered by itself, but will indicate recent high-water stages.

Large cattail mats: The top of large cattail mats are often slightly above OHWM. Be careful of hummocks, floating bogs and mats, but be aware of where they exist in relation to the determination site.

Algae stains: Algae/lichen stain lines should be looked for on rocks, stumps, etc. Algae marks should not be used as the sole basis for a OHWM determination because algae can grow above the OHWM with high water stages and wave splash.

D. Physical Indicators of the Ordinary High Water Mark

There are many physical indicators of the OHWM that are easily identifiable. Final determinations of the OHWM should rely on a combination of several biological and physical indicators and preferably not just one indicator.

Ice scars: Ice marks on trees, soil, etc. are usually above the OHWM. Ice marks should be used with caution because floods, wind and/or ice expansion can cause ice marks well above the OHWM. They are a good indication of the proximity of the OHWM and can help in a final determination.

Erosion from wave wash: Small bays where large waves from high winds would not wash above the OHWM should be used to find erosion from wave wash.

Mud stains and debris: Mud stains on trees, stumps, rocks, etc. give a good indication of the

proximity of the OHWM. The OHWM will usually be located below the mud stains and debris.

Water stains: Water stains on fixed objects, such as large rocks, culverts, seawalls, etc. are excellent indicators of the OHWM. Generally there will be three stain lines on the object (from the bottom) a gray band, a band of lighter color, and then another band of gray or black. The OHWM is located at the line between the lighter color band and the top dark band.



Figure 3.17 Water stains

Leachate marks in the soil: Leachate marks may be found by digging into the immediately adjoining shoreland. Long-term water levels will sometimes leave stain marks in light colored soils known as mottling. Iron is the main coloring substance of the subsoil. When soils become saturated or nearly saturated with water, air is absent or in short supply. When air is limited in the soil, iron exists in the reduced state which is gray in color. When an air supply is present as in well drained soils, the iron is in an oxidized state which is yellowish or reddish in color. Imperfectly and poorly drained soils are nearly always mottled with various shades of gray, brown and yellow, especially within the zone of fluctuation of the water table. Some mottled colors occur unassociated with poor drainage past or present, therefore, such stains should be carefully compared with other indicators. It is important to remember the highest past water level is not necessarily the OHWM.

Change in soil types: Dig into the soil or take cores looking for a change from organic (peat-muck) to mineral soils. Although a soil developing under water may have a high mineral content (usually from water or wind born addition) a soil with a high or exclusive content of organic matter cannot form under well-drained conditions. The presence of a peat or muck profile is therefore a good indicator of a water level that is perpetually at or above the soil surface and thus of an OHWM.

E. Additional Considerations for Ordinary High Water Mark Determinations

In addition to biological and physical indicators, other considerations may influence the OHWM determination.

Cattails: Cattails should not be used as sole indicators of the OHWM. The cattail is a clone plant that can be found above and below the OHWM. It is extremely tolerant to extremes in water conditions.

Water crowfoot: Crowfoot is extremely tolerant of dry conditions, similar to cattails.

Steep cliff areas: Steep cliff areas should be avoided because slumpage of terrestrial vegetation will undoubtedly occur.

Disturbed areas: Disturbed areas should be avoided because OHWM indicators will probably be destroyed or absent. If necessary, the OHWM should be determined elsewhere and the elevation of the OHWM transferred to the disturbed area.

Wave windrow areas: Wave windrow areas should be avoided because aquatic and terrestrial vegetation may be smothered by wave carried materials (sand).

Trapped water: Areas where water is trapped by ice ridges, etc., can indicate an elevated OHWM.

Pollen or algae marks: Pollen and algae marks should not be used as the sole basis for an OHWM determination because they are usually located above the OHWM. Pollen, especially pine pollen, often leaves yellowish marks particularly on large rocks during spring and early summer.

Averaging elevations of OHWM determinations: Individual determinations at the same location should be within 0.1 ft. of each other in elevation. Elevations should not be averaged.

Sites with a long fetch: Wind can cause increased water elevations at ends of long lakes. Staff may have to return on a calmer day to make an accurate determination of water level with reference to a benchmark. Water levels on the opposite sides of lakes elongated especially in an east and west direction could be effected by prevailing winds. There is therefore a possibility that the OHWM on the east and west ends of such lakes may be at different elevations. If this is suspected to be the case, level work should be tied into USGS benchmarks or other reliable datum.

Waterbodies controlled by dams: On lakes or flowages that are controlled by a dam, be wary of drawdowns, erratic level control operations, broken or missing flashboards, etc., that have or could affect water levels and thus the OHWM.

Inflows and outflows: When a body of water has an inflow and/or an outflow, these locations should be checked to see if there are any unusual conditions that could affect the OHWM determination, such as blockages of the inlet or outlet, broken flashboards on the outlet dam, etc. It is also a good idea to tour most of the shoreline and note undisturbed areas before proceeding. If a map of the water body is available, these areas should be marked on the map for further investigation.

High water marks: The highest past water level is not necessarily the OHWM. Whenever possible existing past data on water level reading should be consulted in the determination of the OHWM.

Aerial photos: If a site is disturbed, aerial photographs or maps of the area can serve as excellent evidence to support the location of a former shoreline which existed prior to disturbance.

Reliability: Court decisions usually involve the question: Could a prudent person have reached the same conclusion as staff did in the OHWM determination?

F. Bulkhead Lines

A bulkhead line is an administratively established OHWM. The OHWM should be the very close to the bulkhead line because statutes require bulkhead lines to conform as nearly as practical to the existing shoreline. However, very old bulkhead lines will often show significant departures from the “true” OHWM.

G. Glacial Pothole Lakes

Glacial pothole lakes lack an inlet or outlet and are characterized by water levels that fluctuate substantially over a period of time. Section 59.692 (1)(b) 1., Wis. Stats., provides that if the navigable water is a glacial pothole lake, the measurement of 1,000 feet for the shoreland zone shall be from the high water mark of the lake instead of the OHWM. However, under s. 59.692 (1)(bn), Wis. Stats., the shoreland setback area is measured from the OHWM rather than the high water mark for all lakes, including glacial pothole lakes.

3.53 SHORELAND ZONE DETERMINATIONS

The shoreland zone, as defined in s. 59.692 (1)(b), Wis. Stats., is those lands within:

- 1,000 feet of the ordinary high water mark of a lake, pond or flowage; or
- 300 feet of the ordinary high water mark of rivers and streams or to the landward side of the floodplain, whichever distance is greater.

The statute also provides that if the navigable water is a glacial pothole lake, the measurement of 1,000 feet shall be from the high water mark of the lake.

Occasionally there are questions, however, as to whether a body of water is a “river”, “lake” or flowage”. Table 3.3 *Shoreland Zone Determinations - Lakes, Ponds and Flowages* and Table 3.4 *Shoreland Zone Determinations - Rivers and Streams* provide common examples, some of which have historically proven troublesome for determining the shoreland zone.

Private waterways may become public if the public acquires rights to the waterway by prescription. To do this, members of the general public must use a private waterway without the owner’s permission in an “open and notorious” manner for an uninterrupted 20-year period.

A. Impoundments

Impoundments are flowages and accordingly, shoreland zoning jurisdiction extends 1,000 feet from the OHWM of a flowage or to the landward side of the floodplain, whichever distance is greater.

B. Sloughs Versus Lakes

Determining whether a slough is part of a river or a separate body of water, such as a lake or pond, can be difficult. A slough is considered to be part of a riverine system and accordingly the shoreland should be extended 300 feet from its OHWM or to the landward side of the floodplain whichever distance is greater. The following characteristics of a slough would support this conclusion:

- the same OHWM as that of the adjacent river system;
- periodic connection to the adjacent river system during periods of high-water; and
- relatively recent riverine origin and morphology, i.e., the general shape of a slough is a channel parallel to the adjacent river system resulting from a cut-off ox bow or similar relatively recent geologic events.

The absence of these characteristics may lead to a conclusion that a body of water commonly called a slough is in fact a lake or pond, in which case the shoreland should be extended 1,000

feet from its OHWM. Similarly, if the “slough” is the result of the impoundment of a river or stream, it should be considered part of a flowage and the shoreland includes lands within 1,000 feet of its OHWM. Generally, sloughs will be regulated as part of a riverine system.

C. Enclosed Waterways

If a body of water is navigable above and below the enclosure, the body is considered navigable throughout the length of the enclosure and shoreland or shoreland wetland zoning jurisdiction applies as if the waterway were not enclosed.

3.60 ANNEXED AND INCORPORATED SHORELANDS

When a city or village annexes or incorporates an area that contains shorelands, the provisions of the county shoreland zoning ordinance continue in effect and shall be enforced by the city or village.

Annexations: Section 59.692 (7)(a), Wis. Stats., provides that county shoreland zoning provisions that applied to an area prior to annexation are to continue in effect if the area is annexed after May 7, 1982. The annexing city or village has the following options:

- the city or village that annexed the shoreland area may enforce the county shoreland zoning provisions that were in effect when the area was annexed;
- after annexation, the city or village may request that the county continue to enforce the county shoreland ordinance in the annexed area; or
- the city or village may adopt its own shoreland zoning ordinance for the annexed area provided that it complies with the shoreland zoning ordinance standards in ch. NR 115, Wis. Admin. Code, and is at least as restrictive as the county shoreland zoning ordinance.

Incorporations: For incorporating cities and villages, s. 66.0203 (10) and 66.0213 (2)(b), Wis. Stats., provide that county shoreland zoning provisions that applied to an area prior to incorporation are to continue in effect if the area is incorporated after April 30, 1994. The incorporating city or village has the following options under s. 59.692 (7)(ad), Wis. Stats.:

- the city or village that incorporated the shoreland area may enforce the county shoreland zoning provisions that were in effect when the area was incorporated;
- after incorporation, the city or village may request that the county continue to enforce the county shoreland ordinance; or
- the city or village may adopt its own shoreland zoning ordinance provided that it complies with the shoreland zoning ordinance standards in ch. NR 115, Wis. Admin. Code, and is at least as restrictive as the county shoreland zoning ordinance.

Enforcing County Shoreland Ordinances in Annexed and Incorporated Areas: If a city or village chooses to enforce a county shoreland ordinance for annexed/incorporated shoreland areas, the county shoreland zoning ordinance provisions that were applicable to the annexed/incorporated areas prior to annexation/incorporation shall continue in effect in those shoreland areas after annexation/incorporation, and shall be enforced by the city or village, except as provided in s. 59.692 (7), Wis. Stats.

The county shoreland zoning ordinance that was in effect at the time of the annexation/incorporation of a shoreland area needs to be incorporated by reference into the city's or

Shoreland Zone Determinations		
Lakes, Ponds and Flowages	Navigability	Extent of Shoreland
Natural lake or pond with a defined bed and bank that is navigable-in-fact (including bodies of water called "sloughs" that are actually separate lakes or ponds)	Navigable and public	1000 feet from OHWM
Glacial pothole lake that is navigable-in-fact	Navigable and public	1000 feet from OHWM
Man-made agricultural pond that is navigable-in-fact and not connected to navigable waters*	Non-navigable and private	None
Man-made non-agricultural pond that is navigable-in-fact and connected to waterway that is navigable-in-fact	Navigable and public	1000 feet from OHWM
Man-made non-agricultural pond that is navigable-in-fact and constructed prior to 1963 revision of s. 30.19, Wis. Stats., with (a) no connection or (b) a non-navigable connection to waterway that is navigable-in-fact	Non-navigable and private*	None
Man-made non-agricultural pond that is navigable-in-fact (a) within 500 feet of the OHWM of waterway is navigable-in-fact, or (b) connected to waterway that is navigable-in-fact	Navigable and public	1000 feet from OHWM
Man-made non-agricultural pond that is navigable-in-fact, more than 500 feet from OHWM of waterway that is navigable-in-fact and is not connected to waterway	Non-navigable and private*	None
Flowage that is navigable-in-fact & created by a dam on a navigable waterway	Navigable and public	1000 feet from OHWM or floodplain
Flowage that is navigable-in-fact, created by a dam on a non-navigable waterway and authorized by s. 30.19, Wis. Stats.	Navigable and public	1000 feet from OHWM or floodplain
Flowage that is navigable-in-fact and created by a dam on a non-navigable waterway, but not authorized by s. 30.19, Wis. Stats.	Non-navigable and private*	None
Inner harbors, turning basins, waterways, slips and canals created by a municipality under s. 30.10, Wis. Stats., on a navigable lake, pond, or flowage	Navigable and public	1000 feet from OHWM or floodplain
Lake, pond or flowage that is navigable-in-fact and enclosed pursuant to s. 30.196, Wis. Stats.	Navigable and public	1000 feet from OHWM or floodplain

*See discussion on public rights by prescription.

Table 3.3 Shoreland Zone Determinations - Lakes, Ponds and Flowages

Shoreland Zone Determinations		
Rivers and Streams	Navigability	Extent of Shoreland
Natural stream with a defined bed and bank that is navigable-in-fact	Navigable and public	300 feet from OHWM or floodplain
Non-navigable stream	Non-navigable and private	None
Agricultural drainage ditch that is navigable-in-fact and has navigable stream history	Navigable and public	300 feet from OHWM or floodplain
Agricultural drainage ditch that is navigable-in-fact, no stream history and adjacent shoreland has structures	Navigable and public	300 feet from OHWM or floodplain
Agricultural drainage ditch that is navigable-in-fact, no stream history, and adjacent shoreland is maintained in non-structural agricultural uses	Non-navigable and private*	None
Non-agricultural drainage ditch or channel that is navigable-in-fact, constructed since the 1963 revision of s. 30.19, Wis. Stats., and ultimately connected to a navigable lake, pond, or flowage	Navigable and public	300 feet from OHWM or floodplain
Slough that is navigable-in-fact on a navigable stream	Navigable and public	300 feet from OHWM or floodplain
Inner harbors, turning basins, waterways, slips and canals created by a municipality under s. 30.10, Wis. Stats., on a navigable stream	Navigable and public	300 feet from OHWM or floodplain
Non-agricultural drainage ditch or channel that is navigable-in-fact, constructed since the 1963 revision of s. 30.19, Wis. Stats., and ultimately connected to a navigable stream	Navigable and public	300 feet from OHWM or floodplain
Stream that is navigable-in-fact and enclosed pursuant to s. 30.196, Wis. Stats.	Navigable and public	300 feet from OHWM or floodplain

*See discussion on public rights by prescription.

Table 3.4 Shoreland Zone Determinations - Rivers and Streams

village's ordinance for the purpose of administering the county's shoreland ordinance. The county's shoreland ordinance must be kept on file in the office of the city or village zoning administrator until such time as the city or village adopts its own shoreland zoning for the annexed/incorporated shoreland area that meets the requirements of s. 59.692 (7)(a) 1, Wis. Stats.

3.62 COOPERATIVE AGREEMENTS FOR ANNEXED AND INCORPORATED AREAS

Under s. 66.0301, Wis. Stats., communities may enter into cooperative agreements for the provision of services. This would allow cities and villages to contract with the county or town governments for some administrative components of the shoreland zoning program (for example permit issuance and inspection). However, such a cooperative agreement may not include enforcement or quasi-judicial decisions (variances, appeals, conditional use permits). The city or village must provide for its own Board of Appeals to decide appeals and variance requests, and either a Board of Appeals or zoning agency to handle applications for special exception (conditional use) permits unless the requirements in s. 59.692 (7)(a) 3., or s. 59.692 (7)(ag) 3., Wis. Stats., are satisfied, in which case the county Board of Adjustment could decide appeals and variance requests for the annexed/incorporated shoreland area and the county Zoning Agency, county Board or the county Board of Adjustment could handle applications for special exception (conditional use) permits.

3.63 ADOPTION OF A MUNICIPAL SHORELAND ZONING ORDINANCE

Where a city or village chooses to adopt its own shoreland zoning ordinance for annexed/incorporated shoreland areas, the adopted ordinance must contain a parallel provision that is at least as restrictive (by the tests below) as each provision of the county shoreland ordinance. Restrictions refer to substantive provisions, e.g. 75-foot setback or use designations (zoning districts). The city or village must adopt provisions that are at least as restrictive as the county's ordinance even if a county has adopted shoreland zoning provisions that are more restrictive than the minimum standards of ch. NR 115, Wis. Admin. Code, (such as 100-foot waterway setback instead of 75 feet).

Determining whether a provision is at least as restrictive as the county's depends on the type of provision. There are three general types of shoreland ordinance provisions:

- dimensional standards;
- performance standards; and
- use designations.

Comparisons of dimensional standards and performance standards are straightforward (e.g. a 100-foot setback is more restrictive than a 75-foot setback; requiring zero increased discharge over undeveloped conditions is more restrictive than requiring zero increased discharge over current site conditions).

Use designations can be more difficult to compare. Uses are generally ranked from least intensive to most intensive as follows: conservancy – residential – commercial – industrial. An ordinance that allows fewer and less intensive uses is the more restrictive. Land use designations adopted under the authority of s. 59.692, Wis. Stats., are assumed to be adopted to further the purposes of shoreland zoning. In order to be as restrictive as the county shoreland ordinance, the annexing/incorporating city or village is essentially locked into the county's shoreland use designations in place at the time of annexation/incorporation.

The only way that the use district can be changed after annexation/incorporation of a shoreland area is if the city or village successfully petitions the county to change the land use district designation as it applies to the annexed/incorporated shoreland area (see s. 59.692 (7)(a) 2. and (ag), Wis. Stats.) because the use district designation is not necessary to protect navigable waters. In cases where the use districts were adopted by the county under s. 59.692, Wis. Stats., and a use designation is not desirable or appropriate for the intended use of the parcel, it would be advantageous to apply to the county to have the zoning changed prior to annexation/incorporation so that is not necessary to petition the county to amend the land use district after annexation/incorporation. Specified land uses (use districts) which were clearly adopted by the county under the general zoning provisions of s. 59.69, Wis. Stats. and not under s. 59.692, Wis. Stats. can be amended by the annexing/incorporating city or village after annexation/incorporation following a standard amendment process (without the county's involvement).

Land division review and sanitary regulations that are part of a county shoreland zoning ordinance must be incorporated into the city or village ordinance unless the county amends the ordinance as it applies to the annexed/incorporated area. If the city or village has more restrictive provisions, they also apply.

A city or village ordinance can be “as restrictive” as the county’s shoreland zoning ordinance even where the city or village does not utilize the same ordinance administration procedures as the county uses. Administrative provisions of the municipality’s existing ordinances may be incorporated into a new shoreland ordinance by reference. However, the procedures must comply with the minimum requirements of the standards established in ch. NR 115, Wis. Admin. Code. For example, the annexing/incorporating municipality is required to provide notice to the DNR in advance of public hearings, and of decisions made on proposed variances, special exceptions (conditional uses), appeals, and text and map amendments. These notice provisions must be included in ordinances adopted for annexed/incorporated shoreland areas.



Figure 3.18 Incorporated community

Any city or village zoning provision adopted pursuant to s. 62.23, Wis. Stats., which is applicable to a shoreland area and which differs from, but is more restrictive than the county shoreland zoning provisions is applicable to annexed shoreland areas to the extent of the greater restriction. For example, if the county’s setback averaging provisions would allow a structure to be placed 52 feet from the OHWM, but the municipality has a 60-foot minimum OHWM setback requirement, the 60-foot setback would apply.

If the county did not have the area identified as shoreland on its zoning maps, that does not

change the applicability of the county shoreland zoning provisions to the parcel. All counties have adopted shoreland zoning ordinances, but very few of them have adopted county zoning maps showing the boundaries of the shoreland area nor have they identified all of their navigable waterways. Many navigability determinations and associated shoreland zones are not identified until such time as a development is being proposed. If the site in fact meets the definition of shoreland, the requirements of s. 59.692 (7), Wis. Stats., apply.

The DNR needs to review amended city or village shoreland ordinances for annexed/incorporated shoreland areas to ensure that they are as restrictive as the county shoreland ordinance and that the amended ordinance complies with the shoreland zoning standards in ch. NR 115, Wis. Admin. Code. If an amended shoreland ordinance for an annexed/incorporated shoreland area does not comply with the appropriate requirements and the municipality does not voluntarily alleviate the problem, DNR can initiate procedures to reinstate the county shoreland zoning provisions. (See s. 59.692 (7)(b), Wis. Stats.) Statutes require that the DNR charge the city or village for the costs of reinstatement and that cities and villages administer the reinstated provisions. (See s. 87.30 (1)(c), Wis. Stats.)



CHAPTER 4

SHORELAND-WETLAND ZONING

Shoreland-wetland zoning applies to counties, cities and villages. Chapters NR 115 and NR 117, Wisconsin Administrative Code, require counties, cities and village to adopt shoreland-wetland zoning ordinances and establish minimum standards for such ordinances.

Section 59.692 (counties), s. 61.351 (villages), and s. 62.231 (cities), Wisconsin Statutes, require that each county, village and city shall zone, by ordinance, all wetlands in shorelands. The purpose of a shoreland-wetland zoning ordinance is to promote public health, safety, and welfare; and to achieve the purposes of s. 281.31, Wis. Stats., which are to “maintain safe and healthful conditions; prevent and control water pollution; protect spawning grounds, fish and aquatic life; control building sites, placement of structures and land uses; and reserve shore cover and natural beauty.”

Section 59.692 (1)(b), Wis. Stats., defines shorelands as lands within:

- 1,000 feet of the ordinary high water mark of a lake, pond or flowage; or
- 300 feet of the ordinary high water mark of rivers and streams or to the landward side of the floodplain, whichever distance is greater.

The statute also provides that if the navigable water is a glacial pothole lake, the measurement of 1,000 feet shall be from the high-water mark of the lake. Standards for navigability and ordinary high water mark determinations are discussed in Sections 3.51 and 3.52.

Section 23.32 (1), Wis. Stats., defines wetlands as an area where water is at, near, or above the land surface long enough to be capable of supporting aquatic or hydrophytic vegetation and which has soils indicative of wet conditions.



Figure 4.1 Wetland

Sections 61.351 and 62.231, Wis. Stats., require villages and cities to zone as shoreland-wetlands all wetlands five acres or larger in size that are identified on the Wisconsin Wetland Inventory (WWI) map and are located in the shoreland zone. Where a wetland is five acres or larger and extends outside the shoreland zone, the portion of the wetland within the shoreland zone is regulated. Roads, railroads and similar linear features do not interrupt the continuity of a wetland for the purpose of determining its area and shoreland-wetland jurisdiction. Section NR 115.05 (2)(b), Wis. Admin. Code, requires counties to zone all shorelands within unincorporated areas that are designated as wetlands on the WWI maps (which may designate

wetlands that are two acres or more in size.) Mapping standards for the WWI are discussed in more detail in Section 4.22.

Section NR 115.05 (2), Wis. Admin. Code, contains minimum standards for county shoreland-wetland zoning ordinances and ch. NR 117, Wis. Admin. Code, contains the minimum standards for city and village shoreland-wetland zoning ordinances. These standards may be incorporated into comprehensive zoning ordinances or a county shoreland ordinance, or they may stand on their own in a separate shoreland-wetland zoning ordinance. Communities may voluntarily choose to regulate wetlands smaller than five acres in the shoreland zone and wetlands outside of the shoreland zone.

Additional regulations for shorelands and wetlands can be found in both the Wisconsin Statutes and Administrative Codes. The DNR and the U.S. Army Corps of Engineers are frequently involved in wetland projects with additional requirements beyond the scope of shoreland-wetland zoning. See Chapters 5 and 6 for more information on related programs.

4.10 SHORELAND-WETLAND ZONING REGULATIONS

Shoreland-wetland zoning standards are divided into permitted, conditional and prohibited uses. The permitted and conditional uses are usually open space uses that involve little or no wetland alteration, or uses that require some wetland alteration, but are generally compatible with the preservation of wetland functions. All other uses that may alter the wetland or may significantly adversely impact wetland functions are prohibited.

4.11 PERMITTED AND CONDITIONAL USES

Section NR 115.05 (2)(c), Wis. Admin. Code, states that counties **shall** permit the listed uses subject to the general requirements of s. NR 115.05 (3), Wis. Admin. Code, the provisions of ch. 30 and ch. 31, Wis. Stats., and other state and federal laws, if applicable.

Section NR 117.05 (2), Wis. Admin. Code, states that cities and villages **may** permit, prohibit, or authorize as a special exception (conditional use) the listed uses subject to the provisions of ch. 30 and ch. 31, Wis. Stats., and other local ordinances state and federal laws, if applicable. As a result, cities and villages can adopt more restrictive permitted uses than counties.

A. Outdoor Recreational Uses

Section NR 115.05 (2)(c) 1., Wis. Admin. Code, allows hiking, fishing, trapping, hunting, swimming, and boating. Section NR 117.05 (2)(a), Wis. Admin. Code, expands recreational uses to include snowmobiling.

B. Wild Crop Harvest

Section NR 115.05 (2)(c) 2. and s. NR 117.05 (2)(b), Wis. Admin. Code allow the harvesting of wild crops, such as marsh hay, ferns, moss, wild rice, berries, tree fruits, and tree seeds in a manner that is not injurious to the natural reproduction of such crops and that does not involve filling, flooding, draining, dredging, ditching, tiling or excavating.

C. Silviculture

Section NR 115.05 (2)(c) 3. and s. NR 117.05 (2)(c), Wis. Admin. Code, allow the practice of silviculture, including the planting, thinning and harvesting of trees. The harvesting of firewood

is also a permitted silvicultural activity. Silvicultural activities are permitted provided that no filling, flooding, draining, dredging, ditching, tiling, or excavating is done, except for road construction and maintenance and for temporary water stabilization measures.



Figure 4.2 Silviculture

Silviculture road construction and maintenance is allowed in wetlands if the following criteria are satisfied:

- the road is necessary to conduct silviculture activities;
- the road cannot as a practical matter be located outside the wetland; and
- the road is designed and constructed in a manner to minimize the adverse impact upon the wetland's natural functions.

Zoning permits for silvicultural road construction and maintenance may include the following conditions:

- removal of temporary access roads after firewood cutting or timber harvest;
- winter construction of ice roads for access when practical;
- limiting access to, when frozen ground eliminates the need for road construction; and
- limiting road cross section to the minimum necessary for the silvicultural activity.

Temporary water stabilization measures, such as minor dams, diking or drainage, are allowed to alleviate abnormally wet or dry conditions that would have an adverse impact on the conduct of silvicultural activities if not corrected.

D. Livestock Pastures

Section NR 115.05 (2)(c) 4., Wis. Admin. Code, allows the pasturing of livestock and the construction and maintenance of fences, provided no filling, flooding, draining, dredging, ditching, tiling or excavating is done. However, s. NR 117.05 (2)(d), Wis. Admin. Code, allows limited filling and excavating necessary for the construction and maintenance of fences and the DNR believes it is reasonable to allow this same provision in county shoreland-wetland zoning ordinances, as well as in city and village shoreland-wetland zoning ordinances.

E. Agricultural Crops

Section NR 115.05 (2)(c) 5., Wis. Admin. Code, allows the cultivation of agricultural crops if cultivation can be accomplished without filling, flooding, draining, dredging, ditching, tiling or excavating.

There are three exceptions, however, to the prohibition on filling, flooding, draining, dredging, ditching, tiling or excavating for agricultural crops:

- flooding, dike and dam construction, and ditching shall be allowed for the purpose of growing and harvesting cranberries;
- construction and maintenance of existing drainage systems (such as ditching and tiling) shall be permitted; and

- construction and maintenance of roads shall be allowed if:
 - the road is necessary for agricultural cultivation;
 - the road cannot, as a practical matter, be located outside the wetland; and
 - the road is designed and constructed to minimize adverse impacts upon the wetland's natural functions.

Chapters NR 115 and NR 117, Wis. Admin. Code, are very similar, except that s. NR 117.05 (2)(e) 2., Wis. Admin. Code, further clarifies that the maintenance or repair of existing farm drainage ditches is allowed when permissible under s. 30.20, Wis. Stats., and that the maintenance or repair of other drainage systems (such as tiling) is allowed to restore the functional drainage of existing agricultural lands.



Figure 4.3 Cranberry bogs

Such maintenance or repair of existing farm drainage ditches may include the minimum amount of filling necessary to dispose of dredged spoil if:

- the filling is permissible under ch. 30, Wis. Stats., and
- the dredged spoil is placed on existing spoil banks where possible.

The DNR believes it is reasonable to allow this same provision in county shoreland-wetland zoning ordinances, as well as in city and village shoreland-wetland zoning ordinances.

F. Duck Blinds

Section NR 115.05 (2)(c) 6., and s. NR 117.05 (2)(f), Wis. Admin. Code, allow the construction and maintenance of duck blinds provided that no filling, flooding, draining, dredging, ditching, tiling or excavating is done.

G. Accessory Buildings

Section NR 115.05 (2)(c) 7., Wis. Admin. Code, allows the construction and maintenance of nonresidential buildings that are used solely in conjunction with the raising of waterfowl, minnows, or other wetland or aquatic animals, or that are used solely for some purpose that is compatible with wetland preservation.

A nonresidential building may be allowed in a shoreland-wetland if the following criteria can be met:

- the building cannot, as a practical matter, be located outside the wetland;
- the building does not exceed 500 square feet; and
- no filling, flooding, draining, dredging, ditching, tiling or excavating is done.

Section NR 117.05 (2)(g), Wis. Admin. Code, contains the same provisions, except that s. NR 117.05 (2)(g) 4., Wis. Admin. Code, allows limited filling and excavating as is necessary to provide structural support for the building. The DNR believes it is reasonable to allow this same provision in county shoreland-wetland zoning ordinances, as well as in city and village shoreland-wetland zoning ordinances.

H. Piers, Docks, and Walkways

Section NR 115.05 (2)(c) 8., Wis. Admin. Code, allows the construction and maintenance of piers, docks, and walkways, including those built on pilings, provided that no filling, flooding, draining, dredging, ditching, tiling or excavating is done.

Section NR 117.05 (2)(h), Wis. Admin. Code, contains the same provision except that limited filling and excavating is allowed as is necessary for the installation of the pilings. The DNR believes it is reasonable to allow this same provision in county shoreland-wetland zoning ordinances, as well as in city and village shoreland-wetland zoning ordinances.

I. Parks and Recreational Areas

Section NR 115.05 (2)(c) 9., Wis. Admin. Code, allows the establishment and development of public and private parks and recreational areas, boat access sites, natural and outdoor education areas, historic and scientific areas, wildlife refuges, game preserves, and private wildlife habitat areas, if no filling is done and if any private wildlife habitat area is used exclusively for that purpose.



Figure 4.4 Duck hunting

The owner or operator of a new private recreation or wildlife area that is to be located in a shoreland-wetland zoning district is required to notify the county zoning agency of the proposed project before beginning construction. Ditching, excavating, dredging, and dam and dike construction shall be allowed in wildlife refuge areas, game preserves, and private wildlife habitat areas for the purpose of improving wildlife habitat or to otherwise enhance wetland values.

Section NR 117.05 (2)(i), Wis. Admin. Code, also requires that no filling or excavating is done except for limited filling that is necessary for the development of boat launching ramps, swimming beaches, or the construction of park shelters and similar structures. It also allows the construction and maintenance of roads necessary for permitted uses if the requirements of s. NR 117.05 (2)(k), Wis. Admin. Code, can be met. See Section 4.11 L of this chapter for more information on road construction. The DNR believes it is reasonable to allow these same provisions in county shoreland-wetland zoning ordinances, as well as in city and village shoreland-wetland zoning ordinances.

J. Public Utilities

Section NR 115.05 (2)(c) 10., and s. NR 117.05 (2)(j), Wis. Admin. Code, allow the construction and maintenance of electric, gas, telephone, water and sewer transmission and distribution lines, and related facilities. The construction of utility transmission and distribution lines, and related facilities is allowed if:

- the construction or maintenance cannot, as a practical matter, be located outside the wetland; and
- any filling, excavating, ditching or drainage necessary for such construction or maintenance is done in a manner designed to minimize adverse impacts upon the wetland's natural functions.

Major electrical generating facilities and high-voltage transmission lines that have obtained a certificate of public convenience and necessity under s. 196.491, Wis. Stats., are not subject to the requirements of local ordinances.

K. Railroads

Section NR 115.05 (2)(c) 11., and s. NR 117.05 (2)(l), Wis. Admin. Code, allow the construction and maintenance of railroad lines if:

- the railroad line cannot, as a practical matter, be located outside the wetland; and
- any filling, excavating, ditching or drainage necessary for such construction or maintenance is done in a manner designed to minimize adverse impacts upon the wetland's natural functions.

L. Roads

Section NR 115.05 (2)(c) 12., Wis. Admin. Code, allows the maintenance, repair, replacement, and reconstruction of existing town and county highways. It does not allow for the construction of new roads unless the wetland is rezoned. This provision does not apply to road construction that is allowed with permitted uses described above.

Section NR 117.05 (2)(k), Wis. Admin. Code, allows the construction of roads which are:

- necessary for the continuity of the city street system;
- necessary for the provision of essential utility and emergency services; or
- necessary to provide access to uses permitted under this subsection.

Under s. NR 117.05 (2)(k), Wis. Admin. Code, construction of the roads for the purposes described above is allowed if:

- the road cannot, as a practical matter, be located outside the wetland;
- the road is designed and constructed to minimize the adverse impacts upon the wetland's natural functions;
- the road is designed and constructed with the minimum cross-sectional area practical to serve the intended use;
- road construction activities are carried out in the immediate area of the roadbed only; and
- any filling, flooding, grading, draining, dredging, ditching, tiling or excavating that is done is necessary for the construction or maintenance of the road.

The construction of new highways under the direction and supervision of the Wisconsin Department of Transportation (DOT), in both incorporated and unincorporated areas, is specifically exempted from shoreland, shoreland-wetland and floodplain zoning regulations by s. 30.2022, Wis. Stats., if the projects are carried out in accordance with an interdepartmental liaison agreement (between the DOT and DNR) that addresses the substantive concerns of such zoning regulations.



Figure 4.5 Department of Transportation project

Highway projects are considered to be under the direction and supervision of DOT if a project involves the interstate system, a federal highway, any part of the state trunk system or any project where DOT exercises administrative control of plan preparation and contract supervision. All other non-exempted community highway projects are subject to the provisions of local shoreland, shoreland-wetland and floodplain zoning ordinances. Communities are required to obtain any necessary permits for such highway construction.

Bicycle paths: Bicycle paths that are contiguous to existing or new municipal roadways are allowed under s. NR 117.05 (2)(k), Wis. Admin. Code. The intent, however, is not to allow filling or otherwise altering the entire right-of-way that is reserved for roadway expansion and other purposes. Bicycle paths must meet the same standards for roads as described in s. NR 117.05 (2)(k) 1 - 5, Wis. Admin. Code. The DNR believes it is reasonable to allow these same provisions in county shoreland-wetland zoning ordinances, as well as in city and village shoreland-wetland zoning ordinances.



Figure 4.6 Bicycle path

M. Bridges

Section NR 115.05 (2)(c) 12., Wis. Admin. Code, allows the maintenance, repair, replacement, and reconstruction of existing town and county highway bridges. It does not allow for the construction of new bridges unless the wetland is rezoned. Section NR 117.05 (2)(n), Wis. Admin. Code, has the same provisions for county, city and village bridges that are located in city and villages.

Bridges that are designed solely for pedestrian, ski or snowmobile use are allowed under the provision in s. NR 115.05 (2)(c) (8), and s. NR 117.05 (2)(h), Wis. Admin. Code, which list as a permitted use “the construction and maintenance of piers, docks and walkways including those built on pilings provided that no filing, flooding, dredging, draining, ditching, tiling or excavation is done.” As long as the width of the bridge accommodates only pedestrian, ski or snowmobile traffic and its structural components are designed to accept only reasonable loading from pedestrian traffic, the bridge is logically a part of a walkway (or trail) and therefore a use permitted in the shoreland-wetland district.



Figure 4.7 Pedestrian bridge

The exemption for DOT highway projects extends to DOT bridge projects. Any other bridge construction requires the rezoning of the shoreland-wetland. See the above information in Section 4.11 L on DOT road projects.

N. Drain Tiles

Section NR 117.05 (2)(m), Wis. Admin. Code, allows the installation and maintenance of sealed tiles for the purpose of draining lands outside the shoreland-wetland zoning district, provided that such installation or maintenance is done in a manner to minimize the adverse impact upon the wetland's natural functions. There is not a similar provision in ch. NR 115, Wis. Admin. Code, for counties.

O. Non-Agricultural Drainage Ditches

Section NR 117.05 (2)(o), Wis. Admin. Code, allows the maintenance and repair of existing non-agricultural drainage ditches, where permissible under s. 30.20, Wis. Stats., or of other existing non-agricultural drainage systems (such as tiling) to restore the pre-existing levels of drainage, including the minimum amount of filling necessary to dispose of dredged spoil, provided that the filling is permissible under s. 30.20, Wis. Stats., and that dredged spoil is placed on existing spoil banks whenever possible. There is not a similar provision in ch. NR 115, Wis. Admin. Code, for counties.

4.12 PROHIBITED USES

Any use not listed above is prohibited in a shoreland-wetland zoning district, unless the wetland, or portion thereof, is rezoned by amendment of the county, city or village shoreland-wetland zoning ordinance. See Section 4.23 for more information on rezoning procedures.

4.20 ADMINISTRATION OF SHORELAND-WETLAND ZONING ORDINANCES

Section NR 115.05 (6), and s. NR 117.05 (6), Wis. Admin. Code, require ordinance provisions on the administration and enforcement of the shoreland-wetland zoning ordinance. This section will discuss those provisions in more detail.

4.21 ORDINANCE ADOPTION AND AMENDMENT

When a community amends a shoreland-wetland zoning ordinance, the procedure is the same as the provisions in s. 59.69, s. 61.35, and s. 62.23, Wis. Stats., with the following additional requirements:

- **Public hearings:** At least 10 days prior to the public hearings, communities are required to provide the appropriate DNR office with:
 - written notice of public hearings on ordinance text and map amendments (s. NR 115.05 (6)(h) and s. NR 117.05 (6)(f), Wis. Admin. Code); and
 - a copy of proposed text and map amendments (s. NR 115.05 (2)(b) 3. and s. NR 117.05 (1)(b) 4., Wis. Admin. Code).
- **Adoption of ordinance amendments:** Within 10 days after the adoption of ordinance text or map amendments, communities must also provide the appropriate DNR office with copies of the adopted text and map amendments (s. NR 115.05 (6)(h) and s. NR 117.05 (6)(g), Wis. Admin. Code). [Note: maps are part of the ordinance, just like the ordinance text.]
- **State review prior to public hearing:** DNR staff can work with communities prior to the public hearing stage of proposed maps and text amendments to ensure proposed

amendments comply with applicable statutes and administrative code requirements.

- **Town approval:** County shoreland-wetland zoning ordinances and ordinance amendments do not require approval, and are not subject to disapproval, by any town or town board (as provided by s. 59.692 (2)(a), Wis. Stats.). If, however, a county proposes to regulate wetlands beyond the shoreland jurisdiction, the clerks of affected towns must be notified and towns may veto the amendments under the comprehensive zoning provisions of s. 59.69 (5)(3), Wis. Stats.

4.22 SHORELAND-WETLAND MAP ADOPTION AND AMENDMENT

In 1978, the Legislature directed the DNR to create the Wisconsin Wetland Inventory (WWI) to map Wisconsin's wetlands. The WWI is the basis for shoreland-wetland zoning districts and is the only statewide assessment of wetlands.

Generally, the smallest mapping unit for a wetland is five acres, although some areas are mapped down to two acres. Smaller wetlands are denoted as point symbols on the WWI maps. For city and village shoreland-wetland zoning ordinances, a shoreland-wetland is a wetland five acres or larger in size that is identified on the WWI map and located in the shoreland zone. Communities may voluntarily choose to regulate wetlands smaller than five acres in the shoreland zone and wetlands outside of the shoreland zone. Counties are required to regulate wetlands in the shoreland zone that are two acres or larger if the boundaries of those wetlands are shown on the county's WWI maps.

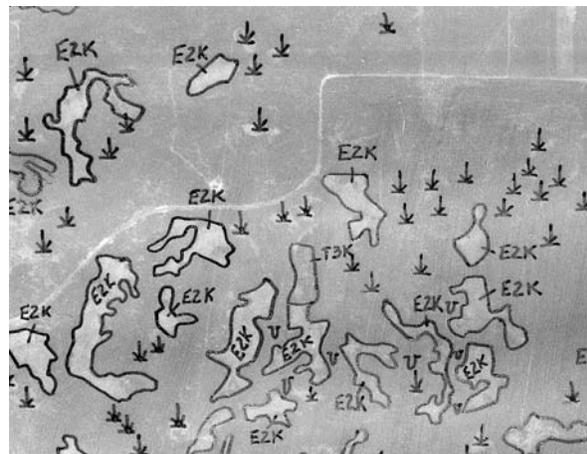


Figure 4.8 Wisconsin Wetlands Inventory map

A. Preliminary Map Approval

When ch. NR 115, Wis. Admin. Code, was amended in 1980 to include shoreland-wetland zoning provisions, all counties, except Milwaukee, were required to adopt shoreland-wetland zoning ordinances. When ch. NR 117, Wis. Admin. Code, went into effect in 1983, all cities and villages with shoreland-wetlands were required to adopt shoreland-wetland zoning ordinances.

Today, cities and villages may need to adopt shoreland-wetland zoning ordinances if they annex land with shoreland-wetlands or if a new city or village incorporates with shoreland-wetlands within the new corporate boundaries.

When a city or village needs to adopt a shoreland-wetland zoning ordinance, they first have the opportunity to review preliminary WWI maps and hold a public hearing to get public comments on map accuracy. Communities must adopt a shoreland-wetland zoning ordinance within six months of receiving final wetlands maps. The following steps are the procedures for city and village review of preliminary WWI maps. Section NR 115.05 (2)(a) and s. NR 117.05 (1)(a), Wis. Admin. Code, detail the procedures described below for review of preliminary WWI maps.

Step 1 - Public Review of WWI Maps: The community has 90 calendar days to complete its review of the maps from the time community officials receive the preliminary WWI maps. The 90-day period will begin on the date that the maps are delivered, according to the registered mail receipt.

Community officials should inform residents of the opportunity to review the community's WWI maps. A city or village may hold a public hearing to get comments on the accuracy of the preliminary WWI maps. Hearing notices must be published as Class 1 notices.

For the purpose of the map review, the community should keep one set of maps in the zoning office, and distribute the other set for wider public availability. A third set of maps is located in the local DNR Water Management Specialist's office. Additional maps may be purchased from the WWI at the DNR. Contact information is located in Appendix C.

Public comments on the maps should be recorded on a "Comment Sheet for Public Review of Wetland Maps". This sheet asks for information needed to evaluate the comments. Comment sheets are available from the WWI.

Step 2 - Prepare WWI Map Comments: After public review of the WWI maps is completed, the community officials should mark areas they believe are incorrect on the WWI maps. A written narrative explaining the problem areas must be prepared as well.

Wetlands were initially located and identified by stereoscopic analysis of aerial photos taken in 1978 and 1979 (the exact date of photography is shown in the "Information on Aerial Photography" block of the map), so the maps reflect conditions that existed at that time. Any wetlands that were drained, filled, or otherwise changed since the date of the aerial photography should be noted in the comments.

Step 3 - Submit WWI Map Comments: On or before the last day of the 90-day review period, one set of maps and the accompanying narrative must be returned to the WWI. The review period may be extended if the community obtains written approval from the DNR. The maximum extension is 90 days, for a total review period of 180 days (approximately 6 months). Requests for extensions of the 90-day review period should be put in writing and sent to the WWI.

Step 4 - Resolve WWI Map Discrepancies: If community officials believe there are inaccuracies on the maps, DNR staff will schedule a meeting with them within 30 days of the return of the preliminary maps to discuss the discrepancies.

Step 5 - Complete Final WWI Maps: After meeting with community officials and evaluating their recommendations, the WWI will prepare final wetland maps for that community.

Step 6 - Ordinance Adoption: Final WWI maps will be sent to community officials with instructions on how to proceed in adopting the final wetland maps and its shoreland-

wetland ordinance. Details on ordinance adoption are found in Section 4.21.

B. Regulation of Unmapped Shoreland-Wetlands

A shoreland-wetland does not have to be mapped on a community's official wetland maps in order to be regulated by the community under its shoreland-wetland zoning ordinance, if an area within the shoreland does in fact meet the definition of wetland that is found in the ordinance.

There are model ordinance provisions in both the 1982 Revised DNR Model Shoreland Zoning Ordinance (Section 9.11) and the 1985 Revised DNR Model Shoreland Zoning Ordinance (Section 8.11) that apply in situations where a wetland has been erroneously omitted from a community's official wetland maps. In the model ordinance provisions, it is suggested that zoning administrators could (and should) immediately grant or deny a zoning permit based on the correct boundaries of a wetland that had been erroneously mapped, without waiting for a map amendment to be adopted.

The community is required to amend its official wetland map as soon as practicable under s. NR 115.05 (6) and s. NR 117.05 (6), Wis. Admin. Code, but the text within the community's shoreland-wetland zoning ordinance that describes the areas that are to be regulated as wetlands is sufficient basis for regulation of wetlands in the shoreland area (whether they are mapped at the time or not).

It is a situation analogous to regulation of the shoreland area. The vast majority of counties do not have maps that show the shoreland area, and yet they are able to regulate the shoreland area based on the definition of shoreland in the statutes and in their ordinances. The same principles apply to the regulation of wetlands in the shoreland area. If an area within the shoreland meets the definition of "wetland," a community has the authority to regulate it under its shoreland-wetland zoning regulations.

C. Updates to Wisconsin Wetland Inventory Maps

The Legislature authorized the DNR to update the WWI on a 10-year cycle. Budget constraints have slowed this process. Local officials will receive updated WWI maps as they become available. There will be no formal comment period as there was for the initial inventory. While there is no specific time-frame for adopting updated maps in ch. NR 115 or NR 117 Wis. Admin. Code, communities are required to adopt the updated maps, and are encouraged to do so promptly to reduce individual amendment requests and the associated workload resulting from outdated maps.

4.23 REZONING SHORELAND-WETLAND DISTRICTS

A shoreland-wetland may, if certain criteria in ch. NR 115 or ch. NR 117, Wis. Admin. Code, can be met, be rezoned so the wetland is removed from the official wetland map and is no longer subject to the shoreland-wetland zoning ordinance. A landowner with a wetland may file a petition asking the community to rezone the shoreland-wetland to allow development or uses otherwise prohibited under the ordinance (i.e., building an access bridge for a driveway or changing a driveway from agricultural use to residential use).

A. Shoreland-Wetland Rezoning Process

To rezone a shoreland-wetland, the same process must be used as with any rezoning request with the additional requirements as described below. Please note that rezoning a shoreland-wetland is the same as amending the map.

Proposed map amendment: As required in s. NR 115.05 (2)(e) 2. and s. NR 117.05 (4)(b), Wis. Admin. Code, a copy of the proposed map amendment shall be submitted to the appropriate DNR office within five days of the submittal of the proposed amendment to the community.

Public hearing: A public hearing, as required by s. 59.69 (5)(e) 2. and s. 62.23 (7)(d) 2., Wis. Stats., shall be held on the proposed rezoning. A copy of the written notice shall be provided to the appropriate DNR office at least 10 days prior to such hearing. See s. NR 115.05 (2)(e) 3. and s. NR 117.05 (4)(c), Wis. Admin. Code.

In order to ensure that the shoreland protection objectives in s. 281.31, Wis. Stats., will still be satisfied by the shoreland-wetland rezoning, a community may not rezone a shoreland-wetland or any portion thereof, if the proposed rezoning may result in a significant adverse impact to shoreland-wetland functions. See subsection B below for a detailed discussion of the criteria to rezone a shoreland-wetland and a description of functions performed by shoreland-wetlands.

Local recommendations and report: The community is required to provide the appropriate DNR office with a copy of the report and recommendations, if any, of the local planning agency/zoning office on the proposed map amendment within 10 days after the submission of those recommendations to the community's council or board. See s. NR 115.05 (2)(e) 7.a. and s. NR 117.05 (4)(f) 1., Wis. Admin. Code.

If the DNR determines that a proposed rezoning may have a significant adverse impact on any of the shoreland-wetland functions, the DNR is required to notify the community of its determination either prior to or during the public hearing on the proposed rezoning. See s. NR 115.05 (2)(e) 5. and s. NR 117.05 (4)(e), Wis. Admin. Code.

Decision: Written notice of the community's decision on the proposed map amendment must be provided to the appropriate DNR office within 10 days after the decision is made. See s. NR 115.05 (2)(e) 7.b. and s. NR 117.05 (4)(f) 2., Wis. Admin. Code.

If the DNR has notified the community that a proposed map amendment may have a significant adverse impact on the shoreland-wetland's functions, the proposed map amendment, if approved, may not become effective until 30 days after the written notice was mailed to the appropriate DNR office. The DNR may, within the 30-day window, notify the community that it intends to adopt a superseding shoreland-wetland zoning ordinance and the proposed map amendment may not become effective until the ordinance adoption procedure is completed by the DNR or otherwise terminated. See s. NR 115.05 (2)(e) 9. and s. NR 117.05 (4)(h), Wis. Admin. Code.

B. Criteria to Rezone Shoreland-Wetland Districts

Section NR 115.05 (2)(e) 4. and s. NR 117.05 (4)(d), Wis. Admin. Code, list seven shoreland-wetland functions. If a proposed shoreland-wetland rezoning could have a significant adverse impact on any of these functions, the shoreland-wetland may not be rezoned. A brief description of each function is provided below.

Storm and flood water storage capacity: Wetlands, because of their dense vegetation and location within the landscape, are important for retaining stormwater from rain and melting snow. Wetlands slow the movement of stormwater runoff and can provide storage areas for flood

waters, reducing the adverse impacts of flooding to downstream areas. Studies in the Midwest have shown that flood flows were reduced by 80% in basins with wetlands compared to those without wetlands.

Wetlands located in the mid- or lower reaches of a watershed contribute substantially to flood control because they are in the path of more water than their upstream counterparts. When several wetland basins perform this function within a watershed, the effect may be staggered with moderate discharge over a longer period of time, reducing flood peaks.

Flood protection is also especially important in urban settings (with large areas of impervious surfaces) and in areas with steep slopes, overgrazing or other land features that tend to increase stormwater amounts and velocity.



Figure 4.9 Rain garden

Groundwater discharge and recharge: Ground water discharge is the process by which groundwater is discharged to the surface. Groundwater discharge is a common wetland function and can be important for stabilizing stream flows, especially during dry months. The health of aquatic life, in many situations, is reliant on the maintenance of dry season stream flows.

Groundwater recharge is the process by which surface water moves into the groundwater system, replenishing groundwater supplies. The filtering capacity of wetland plants and substrates may also help protect groundwater quality.

Water quality protection: Wetlands perform water quality functions that are related to, but not the same as, storm and flood water storage functions. As surface water flows into a wetland, the combination of the flatter slope, the depressional shape of the wetland, and dense emergent vegetation can slow or entirely retain surface water runoff. As water is stored in a wetland, the water-borne sediments with absorbed nutrients and pollutants have the opportunity to settle out. Pollutants such as heavy metals and pesticides absorbed into sediment particles are also stored when sediment particles are buried below the root zone in wetland soils. Wetlands that trap sediments may remove as much as 80% to 90% of the phosphorus attached to sediments.

If surrounding land uses contribute sediment or introduce manure and other pollutants into a watershed, this function may be especially valuable. The sediment or other pollutants may over time, however, overwhelm a wetland, and its ability to provide this function may be compromised.

Fish and wildlife habitat: Many animals spend their whole life in wetlands. Others visit wetlands during critical periods during their life cycle, such as for breeding, feeding, migrating, and nesting. Wetlands are spawning grounds for northern pike, nurseries for fish and ducklings, critical habitat for shorebirds and songbirds, and the lifelong habitat for some frogs and turtles. Wetlands also are the essential habitat for smaller aquatic organisms, such as crustaceans, mollusks, insects and planktonic organisms, which in turn feed other fish and animals higher up in the food chain.

Wetlands with diverse plant cover and open water within large, undeveloped tracts of land provide some of the most valuable wetlands for fish and wildlife. Wetlands can be used by over 450 species of migratory birds, including 25 federally-endangered species. Wetlands may be particularly important if the habitat is regionally scarce, such as the last remaining wetland in an urban setting.

Areas of special concern: Wetlands provide exceptional opportunities for recreation, scenery or scientific inquiry, especially scarce wetland types. Though more difficult to quantify, these special functions are often quite substantial. Wetlands offer this unique combination of functions because of their mix of terrestrial and aquatic life, and physical/chemical processes.

Wetlands located in or near urban settings, and those frequently visited by the public are valuable for the social and educational opportunities they offer. Wetlands can be invaluable classrooms for many subjects, from ecology to art. If a wetland is near a school, it is especially valuable as it is likely to become part of the curriculum.

Open water, lack of pollution and diverse vegetation help contribute to the value of wetlands for recreational and scientific purposes. More valuable wetlands usually support a greater variety of native plants (high diversity), as opposed to sites with little diversity or large numbers of non-native species. Even wetlands with monotypic stands of vegetation can be valued by urban dwellers for open space, aesthetic relief and buffers between incompatible land uses.



Figure 4.10 Area of special concern for migratory birds

4.24 PERMIT SYSTEM

A permit system allows applicants to know exactly what is expected of them and provides the zoning administrator with a method to ensure that the shoreland-wetland zoning regulations are being properly followed. Section NR 115.05 (6)(c) and s. NR 117.05 (6)(c), Wis. Admin. Code, require communities to provide for a system of permits for all new construction, structural alteration or moving of buildings and other structures in shoreland-wetlands. The zoning administrator is required to keep a copy of all applications in the zoning office's files.

Types of permits and their requirements are discussed in more detail in Sections 3.42 through 3.44 of this guidebook.

4.25 STAFF REPORTS

Zoning staff should prepare a report to provide the Board of Adjustment or Planning and Zoning Committee with all the factual data related to an application for a variance, appeal, conditional use or amendment. The staff report should be delivered, along with the agenda, to all members before the meeting. The staff should present and answer questions on the contents of the report early in the meeting so citizens can comment in light of the staff information. See Section 3.45 in this guidebook for more detail on this topic.

4.26 ORDINANCE ENFORCEMENT

Section NR 115.05 (6)(d) and s. NR 117.05 (6)(d), Wis. Admin. Code, require shoreland-wetland zoning ordinances to provide for regular inspections of permitted work to ensure compliance with the terms of the ordinance. In addition, s. NR 115.05 (6)(j) and s. NR 117.05 (6)(i), Wis. Admin. Code, require that ordinances shall establish appropriate penalties for violations of provisions of the ordinance, including forfeitures. Compliance with the ordinance is enforceable by the use of injunctions to prevent or abate a violation, as provided for in s. 59.69 (11) and s. 62.23 (7)(f) 2., Wis. Stats. See Section 3.46 in this guidebook for more detail on this topic.

4.30 DETERMINATIONS

When administering shoreland-wetland zoning ordinances, there are four determinations that zoning staff need to make – navigability, ordinary high water mark, the shoreland zone, and wetland delineations. The first three determinations are discussed in detail in Section 3.50 of this guidebook. This section will focus on wetland delineations, although to become truly proficient at wetland delineation requires field-orientated training and continuous application in the field.

Section 23.32 (1), Wis. Stats., defines a wetland as an area where water is at, near, or above the land surface long enough to be capable of supporting aquatic or hydrophytic (water-loving) vegetation and which has soils indicative of wet conditions. As the definition for wetland indicates, three characteristic indicators – hydrology, vegetation, and soils – identify wetlands.

4.31 WETLAND HYDROLOGY

Wetlands form in areas subject to periodic flooding or in areas where water is present for extended periods. The water comes from rainfall, snow melt, a rising water table, or groundwater seepage. A wetland may have standing water on the surface for varying periods of time, or may simply have saturated soils, with no standing water visible. Prolonged saturation of the root zone creates an environment that limits the growth of most plants and favors aquatic and hydrophytic vegetation.

The frequency and duration of inundation (flooding or ponding) or soil saturation is a major factor that separates wetlands from non-wetlands. Of the three components used for wetland identification, hydrology is often the least exact and most difficult to observe in the field due to multi-year, annual, seasonal and daily fluctuations.

Flooded wetlands: There are four flooded wetland types:

- temporarily flooded wetlands;
- seasonally flooded wetlands;
- semi-permanently flooded wetlands; and
- permanently flooded wetlands.

Temporarily flooded wetlands have surface water for brief periods – usually for less than two consecutive weeks during the growing season. During the summer, the water table may drop to more than three feet below the soil surface. Temporarily flooded wetlands are common along floodplains of major rivers and respond to rainfall and snow melt events.

Seasonally flooded wetlands usually have surface water present for more than two weeks during the growing season. By summer the surface water disappears, but the water table usually remains at or very near the soil surface. Sedge meadows and fresh (wet) meadows are examples of seasonally flooded wetlands.



Figure 4.11 Semi-permanently flooded wetland

Semi-permanently flooded wetlands have surface water present throughout the growing season in most years. Only during droughts or other extended dry periods is surface water absent. The water table will remain at or very near the surface during these times however. An example of semi-permanently flooded wetlands is shallow marshes.

Permanently flooded wetlands have water present throughout the year except in the most extreme droughts. These wetlands include deep marshes and shallow open water zones of lakes, rivers, and streams with water depths generally less than six feet at low water.



Figure 4.12 Permanently flooded wetland

Wetlands with saturated soils: Some wetlands rarely have surface water present, yet their soils are saturated near the surface for much of the growing season. These are:

- floating wetlands;
- seepage wetlands; and
- perched wetlands.

Floating wetlands with bog vegetation can extend as floating mats out into deep waters of lakes and large ponds. While the edges and centers of the bog may have open water, the vegetation of the mat itself is normally never flooded, but rises and falls with fluctuating water levels. Its peaty substrate remains saturated throughout the year.

Seepage wetlands occur in sloping areas where groundwater discharges to the land surface and the soil surface remains saturated for prolonged periods during the growing season (“seasonal seeps”) or for the entire year (“permanent seeps”). Water from the seeps saturates the soil and flows downhill, but does not collect on the land surface.

Perched water table wetlands are flat areas receiving sufficient rainfall or snow melt to saturate the soil, but not to inundate the area with surface water. A confining layer beneath the soil surface, such as clay or bedrock, causes the root zone to be saturated for a few weeks to a few months in spring and early summer. Perched water table wetlands rarely have standing water. They may remain unsaturated during much of the growing season in some years.

Visual observation of hydrology: The most direct and revealing hydrologic indicator is the extent of inundation. However, both seasonal and recent weather conditions should be

considered when observing an area because they can affect whether or not surface water is present on a site.

Saturated soils can be inferred by observing glistening moisture on freshly broken surfaces of the soil. It is important to factor in the season of the year and preceding weather conditions.

A hole dug 20 or more inches deep can help determine the level of water table. Once the hole is dug, staff should wait until water drains into the hole and then observe the level at which water is standing in the hole. The length of waiting will vary depending on soil texture. It is important to factor in both time of year and recent weather when using this indicator. Absence of groundwater during a drought or certain times of the year cannot be relied upon to indicate a non-wetland. Conversely, after a heavy rainfall, an area may appear to have wetland hydrology when it does not.

Other visual indicators of wetland hydrology include:

- watermarks or stains on woody vegetation;
- deposits or driftlines of debris adjacent to streams or other sources of water flow in wetlands;
- gleyed soils extracted by a soil auger;
- surface scouring along floodplains where overbank flooding causes erosion around the bases of trees or along drainage ways;
- water-stained leaves; and
- morphological plant adaptations, such as buttressed tree trunks, multiple trees trunks, adventitious roots, and shallow root systems.

4.32 WETLAND VEGETATION

One of the quickest and easiest ways to identify a wetland is by recognizing wetland plant species. Over the years, many plant species have been observed and recorded growing in wetlands. Many of these plants only grow in wetlands, while a certain number are more wide-ranging, found in wetlands and uplands to varying degrees.

To help identify plants that tolerate long periods of flooding or saturated soils, a wetland indicator status has been assigned to most plants that grow in or adjacent to Wisconsin's wetlands. The national list of plant species that occur in wetlands is available from the U.S. Fish and Wildlife Service at: <http://www.nwi.fws.gov/plants.htm>.

Obligate wetland plants (OBL) can tolerate saturated and inundated soil conditions, but do not compete well with other plant species in upland conditions. Obligate wetland plants occur almost always in wetlands under natural conditions (estimated probability 99%). Wild rice (*Zizania aquatica*) is an example of an obligate wetland plant.

Facultative wetland plants (FACW) usually occur in wetlands (estimated probability 67% - 99%), but occasionally are found in non-wetlands. These plants can tolerate saturated soil conditions and short periods of flooding on a regular basis. They may also compete well with other species in upland conditions. Silver maple (*Acer saccharinum*) is an example of a facultative wetland plant.

Facultative plants (FAC) are equally likely to occur in wetlands or in non-wetlands (estimated probability 33% - 67%). Red maple (*Acer rubrum*) is a facultative plant species.

Facultative upland plants (FACU) occur most often in non-wetlands (estimated probability 67% - 99%), but may occasionally be found in wetlands. A facultative upland plant is red oak (*Quercus rubra*).

Obligate upland plants (UPL) occur almost always in non-wetlands (estimated probability 99%) under natural conditions. These plant species can only tolerate very short periods of soil saturations or cannot tolerate it all. Whorled milkweed (*Asclepias verticellatus*) is an obligate upland plant.

The wetland indicator status of plants should be used to determine the presence of hydrophytic vegetation. Obligate wetland plants (OBL) and facultative wetland plants (FACW) are the best vegetative indicators of wetlands. Facultative upland plants (FACU) and obligate upland plants (UPL) are the least indicative of wetlands. Facultative plants (FAC), like red maple, and occasionally FACU plants, such as hemlock, can predominate in wetlands. By considering the presence, abundance and distribution of all plants (the plant community), one can make a better assessment of a site's wetland status.

Persons making wetland determinations should be able to identify at least the dominant wetland plants in each layer of vegetation of a plant community – herbs, woody vines, shrubs, saplings, and mature trees. Once the dominant plant species in each layer of vegetation has been identified as to genus and species (some plant communities may only have one layer of vegetation), the wetland indicator status can be determined.



Figure 4.13 Identifying wetland plants

In general, the more OBL and FACW plant species in a community, the greater the likelihood that the area is a wetland. All dominant plant species are treated equally in determining whether hydrophytic vegetation is present. When more than 50% of the dominant species of a plant community are OBL, FACW, and FAC species, the plant community is considered hydrophytic.

There may be cases where a site is dominated by FACU species, yet there are signs of wetland hydrology and hydric soils present. In such cases, the site may be determined to be a wetland after further evaluation.

4.33 WETLAND SOILS

Hydric soils and wetlands develop because flooding and/or saturation deprives the soil of oxygen. When water displaces the air in soil pores, microbes quickly use up all the free oxygen. If soils lack oxygen for long periods of time, a number of chemical reactions occur that alter the appearance of the soil. This change in appearance allows for the identification of wetland soils.

The USDA Natural Resources Conservation Service (NRCS) has compiled a list of wetland soils, or hydric soils. The term “hydric” refers to soils that are saturated, flooded or ponded long enough during the growing season to develop anaerobic conditions in the upper layer of soil. In

Wisconsin, the statutory definition of wetlands simply states that the soil be “indicative of wet conditions.” This definition is independent of whether or not a soil appears on the official federal hydric soil list. For the most part, however, wetland soils in Wisconsin will be included in the NRCS hydric soil lists.

The NRCS state lists of hydric soils are available at: <http://soils.usda.gov/use/hydric/lists/state.html>. An example of the NRCS state list for Wisconsin can be found in Figure 4.14.

Locating the site on the soil survey for the county can help make an initial determination of a site’s wetland soil status. After locating the site and determining its soil type, it can be checked against the NRCS list of hydric soils. It is important to remember however, that not all wetland soils in Wisconsin are on the NRCS hydric soil list.

HYDRIC SOILS OF WISCONSIN											
REVISED DECEMBER 15, 1995											
[THE "HYDRIC CRITERIA NUMBER" COLUMN INDICATES WHAT CAUSED THE SOIL TO BE INCLUDED IN THE HYDRIC LIST. SEE THE "CRITERIA FOR HYDRIC SOILS" TO DETERMINE THE MEANING OF THIS COLUMN.]											
SERIES AND SUBGROUP	TEMPERATURE	DRAIN-AGE CLASS	HIGH WATER TABLE		PERM. TO 20 INCHES	FLOODING		HYDRIC CRITERIA NUMBER	CAPABILITY		
			DEPTH	MONTHS		FREQUENCY	DURATION		MONTHS	CRITICAL PHASE CRITERIA	AND SUB-CLASS
ADEXER (W10491) TERRIC MEDISAPRISTS	MESIC	VP	+1	-1.0	SEP-JUN	<6.0	FREQUENT	LONG	OCT-JUN	1, 3, 4	4W
										UNDRAINED	5W
ADOLPH, DEPRESSIONAL (M10188) TYPIC EPIAQUOLLS	FRIGID	VP	+1	-0	OCT-JUN	<6.0	NONE		2B3, 3	DRAINED	4W
										UNDRAINED	6W
ADRIAN (M10228) TERRIC MEDISAPRISTS	MESIC	VP	+1	-1.0	NOV-MAY	<6.0	NONE		1, 3	DRAINED	4W
										UNDRAINED	5W
ADRIAN, FLOODED (M10328) TERRIC MEDISAPRISTS	MESIC	VP	+3	-0.5	OCT-JUN	<6.0	FREQUENT	LONG	OCT-JUN	1, 3, 4	4W
										UNDRAINED	5W
AKAH (M10260) TYPIC HAPLAQUEPTS	MESIC	P	+1	-1.5	NOV-JUN	<6.0	FREQUENT	BRIEF	NOV-MAY	2B3, 3	2W
										UNDRAINED	6W
FALGAMBEE (M10123) AQUIC UDIPSAMENTS	MESIC	SP	1.0	-2.0	NOV-MAY	<6.0	FREQUENT	LONG	NOV-MAY	4	5W

Figure 4.14 Hydric Soils of Wisconsin USDA

Organic soils: Generally, all undrained organic soils in Wisconsin are wetland soils. A soil is considered “undrained” if it is classified as poorly drained, very poorly drained, and, in some cases, somewhat poorly drained. An organic soil has more than 16 inches of organic material in the upper 32 inches of the soil profile.

Non-sandy and drained mineral soils: Non-sandy and drained mineral soils are generally wetland soils if:

- the surface layer is 8 to 16 inches thick with peat or muck; or
- the dominant colors in the mineral soil matrix are of chroma 2 or less with mottles present; or
- the dominant colors in the mineral soil matrix are of chroma 1 or less without mottles present.

Sandy soils: Sandy soils are generally wetland soils if:

- there is a sandy surface layer with much organic matter; or

- there are vertical or horizontal streaks of organic matter; or
- there is a near-surface organic pan; or
- there is a known high water table.

To become truly proficient at wetland delineation requires field-orientated training and continuous application of the training in the field. Two excellent resources for wetland delineation include the Basic Guide to Wisconsin's Wetlands and Their Boundaries and Wetland Plants and Plant Communities of Minnesota and Wisconsin.

4.40 ANNEXED AND INCORPORATED WETLANDS

When a city or village annexes or incorporates an area that contains wetlands, two situations may arise. First, the land may contain shoreland-wetlands and be subject to shoreland-wetland zoning. The second situation is more complicated and occurs when a county has decided to regulate wetlands beyond the scope required by ch. NR 115, Wis. Admin. Code. Sections 4.41 and 4.42 of this guidebook explain how each situation should be approached.

4.41 WETLANDS REGULATED UNDER SHORELAND-WETLAND ZONING

When an annexation or incorporation occurs and the land affected contains shoreland-wetlands (wetlands of five acres or larger in the shoreland zone), the city or village must have in place a shoreland-wetland zoning ordinance that meets the requirements of ch. NR 117, Wis. Admin. Code. Cities and villages do not have to adopt regulations that are as restrictive as the county's regulations for shoreland-wetlands.

Section 59.692 (7)(e), Wis. Stats., provides that the city or village has to adopt shoreland-wetland zoning as required by either s. 61.351 or s. 62.231, Wis. Stats. If a community does not have a shoreland-wetland ordinance in place at the time of annexation or incorporation, s. 66.0213 (2)(b), Wis. Stats., provides that county shoreland-wetland zoning provisions that applied to the shoreland-wetland prior to annexation/incorporation continue in effect until the city or village has its own shoreland-wetland ordinance in place.

If the city or village has a shoreland-wetland zoning ordinance in place before the annexation, the ordinance and map needs to be amended to include any shoreland-wetland areas located within the annexed area.

4.42 WETLANDS REGULATED BEYOND SHORELAND-WETLAND ZONING

If the county has adopted any zoning restrictions applicable to shoreland-wetlands of less than five acres or has adopted other wetland regulations under authority of s. 59.692, Wis. Stats., the city or village must continue to enforce the county's regulations that apply to those areas, unless the city or village adopts regulations of its own that are at least as restrictive as the county's regulations that were applicable to the area at the time of annexation or incorporation, as required by ss. 59.692 (7)(a) and (ad), Wis. Stats. The exemption in s. 59.692 (7)(e), Wis. Stats., does not apply to wetlands that are not subject to regulation under s. 61.351 or s. 62.231, Wis. Stats.

More details on the options available cities or villages in this situation can be found in Section 3.60 of this Guidebook.



CHAPTER 5

THE STATE'S ROLE – THE DEPARTMENT OF NATURAL RESOURCES

Communities have broad authority to zone lands to promote public health, safety, convenience and general welfare, and to protect navigable waters, wetlands and shoreland areas, property and human life through the adoption of floodplain, shoreland and shoreland-wetland zoning ordinances. The state also has a role in floodplain, shoreland and shoreland-wetland zoning that is assigned to the Department of Natural Resources (DNR) by the Legislature under sections 59.692, 87.30 (1) (a) and 281.31 of the Wisconsin Statutes. The DNR serves as the central unit of state government for the protection, maintenance, and improvement of the quality and management of the waters of the state. Specifically, the DNR has four responsibilities:

- to review and approve locally adopted ordinances and amendments for compliance with chapters NR 115, 116 and 117, Wisconsin Administrative Code;
- to monitor local administration of floodplain, shoreland and shoreland-wetland zoning ordinances and decisions by conducting audits, community visits and reviewing variance and rezoning proposals, and other amendments, for compliance with ch. NR 115, 116 and 117, Wis. Admin. Code;
- to recommend enforcement actions in situations where a community fails to comply with the state or federal minimum standards; and
- to adopt a superseding ordinance when a community fails or refuses to adopt complying ordinances.

The DNR also sets and maintains statewide floodplain and wetland mapping standards which are consistent with federal standards for floodplains, provides technical assistance, conducts information and education programs and facilitates participation by local units of government in the National Flood Insurance Program (NFIP) and that program's comprehensive package of assistance and services.

The DNR functions as a partner with the local units of government that share responsibilities with the agency for floodplain, shoreland, and shoreland-wetland management as well as those federal agencies having authority in these areas. Wisconsin statutes and administrative rules specifically delegate to local officials the responsibility of adopting and administering floodplain, shoreland, and shoreland-wetland regulations. In very limited instances, the DNR takes on a more active enforcement role when other avenues have failed.

5.10 DAM SAFETY, FLOODPLAIN AND SHORELAND MANAGEMENT SECTION (DSFS)

The section of the DNR with primary responsibilities for partnering with local governments on floodplain, shoreland and shoreland-wetland zoning is the Dam Safety, Floodplain, and Shoreland Management Section (DSFS). DSFS is a unit of the Bureau of Watershed Management within the Division of Water in the DNR.

The DSFS is composed of three programs:

- Dam Safety Program;

- Floodplain Management Program; and
- Shoreland Management Program.

The responsibilities of the Dam Safety Program are outlined in ch. 31, Wis. Stats. and include dam permitting; dam construction; dam safety, operation, and maintenance; dam alteration or repair; dam removal and dam transfers; and water level and flow control. Among the duties performed by the staff of the Dam Safety Program are the inspection of large dams located on navigable waterways, the provision of guidance to public and private dam owners including Emergency Action Plans. The Dam Safety Program has responsibility for about 95 percent of the dams in Wisconsin; the remaining five percent of dams, which generate hydroelectric power, come under federal jurisdiction.

The responsibilities of the Floodplain Management Program center on helping local units of government protect lives and property through floodplain management. State and federal regulations complement each other in order to achieve the same goals: protecting life, health, and property; minimizing public expenditures for flood control projects and rescue and relief efforts; keeping business interruptions and damage to public facilities to a minimum; minimizing the occurrence of future blight areas; discouraging the victimization of unwary land and home buyers; and preventing increases in regional flooding.

The responsibilities of the Shoreland Management Program focus on the adoption of shoreland and shoreland-wetland zoning ordinances, the purpose of which are to regulate development near navigable lakes and streams, and in shoreland-wetlands, in compliance with statewide minimum standards. The areas included in the Shoreland Management Program's regulatory responsibilities are lands that are within 1,000 feet of a navigable lake, flowage, or pond or land that is within 300 feet of a navigable stream, or the landward side of a floodplain (whichever is greater).

A. Setting and Maintaining Minimum Standards

The waterways of Wisconsin are a public resource not confined by community boundaries. The effect of actions taken in a waterway at one place frequently extends beyond the local area. Therefore, regulatory standards that apply to waterways and adjacent lands must meet or exceed minimum standards statewide in order to be effective. The use of minimum standards ensures that the primary goals of the state (and the NFIP, in the case of floodplain standards) are met without placing an undue burden on communities. Local governments are allowed to exceed the state minimum standards.

The minimum standards for floodplain, shoreland, and shoreland-wetland zoning ordinance provisions and the responsibilities of local units of government are contained in ch. NR 115, NR 116 and NR 117, Wis. Admin. Code. Administrative rules are adopted for the purpose of implementing statutory requirements and have the force of law.

B. Ordinances

Model Ordinances. DSFS staff have prepared model ordinances that local governments can adopt. The ordinances include all the provisions and requirements mandated by federal/state statutes (as well as some suggested provisions which exceed the minimum standards for shoreland zoning ordinances) and are, in effect, a comprehensive guide for local communities.

Some local governments have adopted model floodplain and/or shoreland and/or shoreland-wetland zoning ordinance language verbatim, without making any changes. Such ordinances meet the minimum standards for the related federal and state laws and requirements. Other local governments have chosen to tailor the model ordinance language to meet specific local circumstances or special local needs. It is important to note that any ordinance changes - during the initial adoption phase as well as subsequent amendments and changes - must be at least as restrictive as the state standards.

Copies of the Wisconsin Model Floodplain Zoning Ordinance can be downloaded from the DNR DSFS website: <http://www.dnr.wi.gov/org/water/wm/dsfm/flood/communities.htm>. Minimum requirements for the NFIP can be found in 44 CFR 59 – 79, primarily 44 CFR 60.3. Model shoreland and shoreland-wetland zoning ordinances are available at <http://www.dnr.wi.gov/org/water/wm/dsfm/shore/local.htm>.

Ordinance and Hearing Review. DSFS staff work closely with local governments in monitoring zoning administration effectiveness, reviewing ordinances for compliance with current federal and state standards, and approving ordinance adoptions and amendments. The staff can provide technical guidance and help resolve unusual or complicated issues related to these activities. Floodplain ordinances and amendments are not effective until they are approved by the DNR. In addition to certifying a local ordinance, the DNR may also condition its approval or deny approval. Shoreland ordinances and shoreland-wetland ordinances and amendments including rezonings or other shoreland amendments go into effect upon meeting the requirements of state law, such as filing with the local clerk, appropriate public notices, and other requirements. However, DNR has the authority to adopt superseding ordinances if an ordinance or amendment adopted by the local government does not meet state standards.

DNR staff also review local decisions on variances, conditional uses, and appeals to ensure they meet state requirements. Regional and central office staff are available to comment on technical issues and can provide written comments or may be available to appear at hearings. The DNR has standing to appeal local decisions to a local government's Board of Adjustment or Appeals, and to Circuit Court. Table 5.1 *DNR Response to Local Actions* lists the DNR's response to actions taken by a community.

Local officials must provide written notice to the DNR of public hearings and decisions on conditional uses, variances, appeals of boundary determinations or text interpretations, and map or ordinance amendments. Local zoning boards, committees, and zoning administrators should contact DNR field staff well in advance of hearings or any official decision or resolution in order to discuss possible problems informally. This is particularly important when projects require DNR approval or DNR-issued permits.

Case Law. On numerous occasions, court challenges to local application of floodplain and shoreland zoning ordinances have been filed. A review of legal rulings from the Wisconsin Supreme Court and published decisions of the Wisconsin Court of Appeals that have a particular impact on, and application to, floodplain and shoreland zoning have been gathered together into one document entitled [Zoning Case Law in Wisconsin](#). The document has been prepared by the DNR Bureau of Legal Services and is updated on a periodic basis. It can be accessed via the DNR's Web site: <http://www.dnr.state.wi.us/org/water/wm/dsfm/shore/Caselawsummary.htm>.

DNR Response to Local Actions			
Local Action	Local Document	Type of Response	Time Frame DNR Response
Variances, Conditional Use, Appeals, (subject to public hearings)	Notice of Hearing (Class 2)	Hearing appearance, or letter before hearing	At or before hearing
	Copy of decision	Appeal to Board of Adjustment/Appeal or court	30 days
Map or Ordinance Amendment	Draft Amendment for hearing	Letter or phone call	Before hearing
	Notice of hearing (Class 2)	Hearing appearance or letter before hearing	At hearing
	Adopted Amendment	Approval letter (official) for floodplain (no notice, unless superseding, for shoreland or wetland)	30 days
Permit for development	Application for permit, letter or phone contact	Letter or phone call	Prior to decision being made
	Copy of permit	Appeal to Board of Adjustment/Appeal or court	30 days if appealing

Table 5.1 DNR Response to Local Actions

C. Program Review/Enforcement/Assistance

Program Review. Both DNR regional and central office staff periodically review local zoning programs. The goals of such reviews, known as Community Assistance Visits (CAVs), are:

- to assist communities in resolving problems with ordinance administration issues;
- to assist communities in planning for a more efficient and effective ordinance administration process; and
- to provide guidance for future program directions and legislative decisions concerning regulatory changes.

The periodic reviews also provide the DNR with an opportunity to monitor whether or not local regulatory activity is consistent with state requirements and to determine the effectiveness of state-sponsored programs and regulations in protecting water resources throughout the state.

The type of information gathered during CAVs varies depending on whether a floodplain zoning program and ordinance are under review or whether the review centers on shoreland and shoreland-wetland zoning. The items reviewed during a floodplain zoning CAV include:

- the number of years since the last review;
- how well the community enforces its ordinance, based on a review of ordinance violations and the community's ordinance administration history;
- the number of permits issued in the floodplain during the last two years;

- the number of structures listed in FEMA's Biennial Report;
- NFIP participation status;
- the number of people and structures in the floodplain;
- the area's flood history (area impacted, recent flooding, severity of flooding problems); and
- the number of flood insurance policies in the community.

A CAV dealing with shoreland and shoreland-wetland zoning would use the following as a guide for selecting communities and for eventual discussion with community officials:

- information concerning any possible violations in the community;
- the percentage of variances granted by the local Board of Adjustment or Appeals; and
- the number of cases that have been referred to the Wisconsin Department of Justice for appeal.

Enforcement. The DNR has the authority to respond to specific actions taken by a community and to take enforcement action if necessary. Generally, DNR enforcement action is taken only if other methods have not been successful in resolving the problem. Local governments with a pattern of floodplain violations may be recommended for suspension from the NFIP. Suspension results in the cancellation of existing flood insurance policies and residents being unable to purchase new policies. The DNR and communities may also seek denial of flood insurance for an individual property if floodplain violations are not removed or abated. Authorization for DNR enforcement actions and provisions allowing "aggrieved persons" (including DNR) to appeal local zoning decisions are found in the following Wisconsin statutes: s. 87.30(2) (floodplain zoning); s. 59.69 (county planning and zoning authority); s. 61.35 (village planning); and s. 62.23 (city planning) along with the applicable administrative rules. Table 5.2 *Enforcement Options for Local Zoning Decisions* lists the situations in which enforcement action may be taken by the DNR and the action taken.

Technical Assistance. DSFS offers the following types of technical assistance to communities:

- general program administration guidance including program or policy interpretation; assistance in tailoring regulations to specific local conditions; written comments on proposed projects; and testimony at local hearings;
- issue-specific guidance including navigability determinations, location of an ordinary high water mark, wetland boundary determination, wetland map interpretation, floodplain or floodway/floodfringe boundary determination guidance, flood documentation, and flood hazard mitigation planning;
- community ordinance database which provides information on ordinance status, type of ordinance, adoption date, and related information; and
- legal resources which can provide guidance, general information, and references to legal resources (e.g., statutes, administrative rules, case law) and facilitate a request for an opinion from the department's Bureau of Legal Services.

Information and Education. DSFS is committed to building community-based zoning expertise as a way of serving property owners, facilitating local zoning processes, preserving water-related resources throughout the state, minimizing costs to property owners and

Enforcement Options For Local Zoning Decisions	
Situation	DNR Action
Permit granted (or not required) in error by Zoning Administrator	Appeal to the Board of Adjustment or Appeals
Conditional Use Permit granted in error by local planning and zoning committee	Appeal to the Board of Adjustment or Appeals
Error in granting variance, conditional use or appeal by the Board of Adjustment or Appeals	Appeal to the Circuit Court within 30 days of decision. (certiorari action, meaning court reviews local board's decision, based on the record before the board)
Failure to adopt zoning ordinance by county, city or village board	DNR conducts adoption process; municipality must pay adoption costs and administer ordinance
Adoption of ordinance or amendment not meeting state standards	DNR adopts a superseding ordinance or amendment; municipality must pay adoption costs and administer ordinance
Adoption of shoreland-wetland map amendment not meeting rezoning criteria	DNR adopts a superseding amendment; municipality must pay adoption costs and use correct map
Municipality doesn't administer minimum state zoning standards (e.g., doesn't issue required permits) OR municipality doesn't seek enforcement of zoning or restoration of damaged sites	Seek mandamus order in Circuit Court (requiring municipality to administer an ordinance)
Municipality needs support in legal action on individual violations of floodplain, shoreland or shoreland-wetland ordinance provision	Request DOJ to intervene in the case or file an amicus (friend of the court) brief in support of local zoning in special cases.

Table 5.2 Enforcement Options for Local Zoning Decisions

governmental units, and meeting the requirements of federal and state laws. Integral to meeting the goals and objectives of this mission are information and education-related activities.

Among the information and education activities undertaken by DSFS are the following:

- Training sessions. Workshops and training sessions are offered throughout the year, often in partnership with other agencies such as the University of Wisconsin-Extension. The sessions are designed to present information about DSFS initiatives and changes in federal programs (e.g., additional NFIP requirements). In addition to providing training for local officials, workshops and training sessions are also available for the consultants who advise and work with local units of government and DNR regional staff who are charged with enforcing zoning-related requirements;
- Publications. Technical publications and informational materials are prepared by DSFS

staff. Included in this effort is the preparation of this guidebook, which has been revised to provide up-to-date information in a user-friendly format.; and

- Web pages. The DSFS web site has a wealth of information, including links to such publications as Zoning Case Law Summary in Wisconsin, Zoning Board Handbook for Zoning Boards of Adjustment/Appeals, and Creating an Effective Shoreland Zoning Ordinance: A Summary of Wisconsin Shoreland Zoning Ordinances). Other information that can be accessed at the Web site include current and back issues of the newsletter “Floodplain-Shoreland Management Notes” and the model ordinances themselves. The site also includes links to other agencies and organizations and their publications and can be accessed at: <http://www.dnr.wi.gov/org/water/wm/dsfm/index.htm>.



CHAPTER 6

RELATED PROGRAMS AND RESOURCES

6.10 FEDERAL AGENCIES

Several different federal agencies are involved in the management of floodplains and shorelands. A brief description of these agencies is given below. Detailed contact information can be found in Appendix C of this Guidebook.

A. Federal Emergency Management Agency

The Federal Emergency Management Agency (FEMA) is part of the Department of Homeland Security (DHS). FEMA brings together a broad range of services and programs under one authority. The primary purpose of the agency is to provide a coordinated response to a wide range of natural and man-made disasters. A presidential disaster declaration triggers a wide range of services from FEMA.

FEMA administers the National Flood Insurance Program (NFIP). The NFIP was created by Congress in 1968 in response to the growing demand for flood disaster assistance. The NFIP makes federally-subsidized flood insurance available to all residents and property owners in communities which agree to participate in the program and enact comprehensive floodplain management regulations. FEMA administers the NFIP through the Federal Insurance and Mitigation Administration.

Communities choosing to participate in the NFIP must require permits for all development in Special Flood Hazard Areas (SFHA) and ensure that construction materials and methods used will minimize future flood damage. Permit filings must include detailed information on how buildings were constructed. Communities must also ensure that their adopted floodplain management ordinance and enforcement procedures meet program requirements. Federal requirements are minimum requirements. States may enact more stringent standards that must be reflected in local ordinances and enforcement procedures. While the NFIP regulations only apply in SFHAs, local communities may choose to regulate development and require the federal standards be met in areas that present a moderate flood hazard. It is important to note that flood insurance is required for any structure in the SFHA which has a federally-backed loan (VA, FHA) or for any loan which is sold on the secondary market.

In Wisconsin, the agency that coordinates NFIP activity is the Wisconsin DNR, specifically the Dam Safety, Floodplain Management, and Shoreland Management Section (DSFS), which assists communities in developing and adopting floodplain management measures, including mitigation activities.

The Disaster Mitigation Act of 2000 (DMA 2000) and early amendments in 1973 and 1994 strongly linked disaster assistance to pre-disaster mitigation planning and regulation and enforcement. This legislation amended the Robert T. Stafford Disaster Relief and Emergency Assistance Act. The goal of DMA 2000 is to control and streamline the administration of federal disaster relief and mitigation programs.

FEMA also administers two other flood-related programs:

- Flood Mitigation Assistance Program, which provides pre-disaster grants (planning, project, and technical assistance) to help communities with projects to reduce or eliminate flood-related damages to at-risk structures.
- Flood Hazard Mapping, which provides updated maps and related information for local floodplain managers, lenders, insurance professionals, engineers and surveyors, and homeowners. FEMA maps are the only ones that are used in determining assistance awards. In addition to their use in identifying flood-prone areas, the maps are used by FEMA and many other entities more than 15 million times per year to make decisions related to floodplain management, insurance, mitigation and legal activities.

Further information on FEMA and the NFIP can be obtained at <http://www.fema.gov>.

B. U.S. Army Corps of Engineers

The U.S. Army Corps of Engineers (USACE) is a major command of the United States Army. In addition to providing design and construction services to the nation's military branches and federal agencies, USACE plans, designs, builds, and operates water resources and other civilian projects (e.g., flood control, navigation, environmental protection). The USACE also provides technical assistance to state and local units of government.

In addition to its involvement with military-related construction efforts and water-based transportation infrastructure, the USACE administers Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act. This means activities involving any part of the surface water tributary system (natural waters including small streams, lakes, ponds, and wetlands), as well as isolated man-made waters (livestock tanks and construction or mining pits) come under a level of USACE jurisdiction.

The State of Wisconsin receives services and assistance from three USACE districts: the Detroit District; the Rock Island District; and the St. Paul District. USACE boundaries vary according to function. Regulatory and Section 404 functions are assigned exclusively to the St. Paul District Office. Floodplain management and planning function are divided among the Detroit, Rock Island and St. Paul Districts.

Further information on the USACE can be obtained at <http://www.usace.army.mil>.

C. Natural Resources Conservation Service

The Natural Resources Conservation Service (NRCS) is an agency of the U.S. Department of Agriculture. The bulk of its duties involve providing technical and financial assistance to private landowners in order to protect, conserve, and improve natural resources. While three-quarters of its services are made available directly to private landowners, the NRCS also provides technical assistance to local units of governments, as well as the state's tribal nations. With conservation technical assistance the core of the agency's mission, NRCS programs, services, guidance, and assistance cover a wide range of activities that impact on water, air, plant, and animal resources, along with soil.

Further information regarding the NRCS can be obtained at <http://www.nrcs.gov>.

6.20 STATE AGENCIES AND PROGRAMS

A variety of state agencies and programs have authority over the state's floodplains and shorelands. Detailed contact information can be found in Appendix C of this Guidebook.

A. Wisconsin Emergency Management

The primary responsibility of Wisconsin Emergency Management (WEM) is to respond to natural and technological emergencies, such as floods, tornadoes, storms, nuclear plant incidents, terrorism/security threats, and hazardous substance spills.

WEM administers three FEMA-sponsored hazard mitigation programs available to communities to minimize disaster losses through local efforts:

- Flood Mitigation Assistance Program (FMA) works to reduce or eliminate damage to buildings insured under the National Flood Insurance Program, as well as reduce the number of buildings that have been repetitively or substantially damaged by flooding and to promote comprehensive flood mitigation planning (e.g., structure acquisition/relocation, floodproofing, flood mitigation plans).
- Pre-Disaster Mitigation Program (PDM) awards grants to local communities to implement hazard mitigation projects to reduce risks to the built environment. The awarding of funds under this program is not dependent on a presidential disaster declaration.
- Hazard Mitigation Grant Program (HMGP), which provides funding to local communities and eligible private non-profit organizations for long-term mitigation measures after a federal disaster.

WEM prepares two reports on a regular basis: the State of Wisconsin Repetitive Loss Report, a biennial report that compiles statistical information concerning properties that have experienced repeated damage from flooding; and the State of Wisconsin Hazard Mitigation Plan, which assesses major hazards in the state and suggests ways to reduce vulnerability. Both reports are a factor in decisions to award funding for mitigation efforts.

Further information on WEM can be obtained at <http://emergencymanagement.wi.gov>.

B. Department of Administration Coastal Management Program

The Department of Administration's (DOA) Coastal Management Program works to protect all aspects of the Great Lakes resources Wisconsin enjoys. The program administers grants, formulates policy, and acts as a liaison with the federal government.

Further information on the DOA Coastal Management Program can be obtained at <http://doa.wi.gov>.

C. Department of Agriculture, Trade, and Consumer Protection

This Department of Agriculture, Trade, and Consumer Protection (DATCP) regulates a wide

range of agriculture, trade, and commercial activities in Wisconsin. In 1977, the Wisconsin Legislature expanded the DATCP's responsibilities related to land and water resources, pesticides, groundwater, and agricultural chemical storage. Farmland preservation, soil conservation, drainage districts and non-point source pollution are some of the agency's major activities.

DATCP works with landowners to promote environmental practices and conservation efforts. Areas of concern include water contamination, runoff and soil erosion control, and fertilizer and nutrient management. DATCP addresses groundwater contamination and also provides assistance for persons who rely on wells for their water supplies.

Further information on the DATCP can be obtained at <http://www.datcp.state.wi.us>.

D. Department of Commerce

The Department of Commerce (DOC) works with communities to plan, manage, and direct their own economic development. This includes the Brownfields Initiative, review of plans for new fuel tanks, the administration of the commercial and residential building codes, regulation of manufactured home sellers and parks, soil erosion control, and Private On-site Wastewater Treatment Systems (POWTS). The DOC also administers the Wisconsin Fund, a program that provides grants to homeowners and small commercial business owners to help offset the cost of repair, replacement, or rehabilitation of failing private onsite wastewater treatment systems.

Further information on the DOC can be obtained at <http://commerce.wi.gov>.

6.30 UNIVERSITY-BASED RESOURCES

The University of Wisconsin (UW) is a good resource for technical information and training related to floodplain and shoreland management. A brief description of the services offered by UW is given below.

A. University of Wisconsin Sea Grant Institute

The UW Sea Grant Institute conducts research on a wide range of water- and resource-related topics, including agriculture, streambank erosion and stabilization, conservation and construction, environmental planning, floodplains and flood control, groundwater, runoff, pollution, zoning, etc.

Further information on the UW Sea Grant Institute can be obtained at <http://www.seagrant.wisc.edu>.

B. University of Wisconsin-Extension Local Government Center

The UW-Extension Local Government Center's mission is to address local government educational needs and coordinate existing faculty and staff from UW System institutions. In 1994, the Center added staff to address growth management and community planning and design issues. The Center provides focus, coordination, and leadership for UW System local government programs.

Further information on the Center can be obtained at <http://www.uwex.edu/lgc>.

C. Wisconsin Geological and Natural History Survey

The Wisconsin Geological and Natural History Survey (WGNHS) is an interdisciplinary organization that conducts natural resources surveys and research that is used for planning, development, and education. The maps, records, and reports produced by the WGNHS provide basic data for resource, land-use, and environmental management and cover a wide range of subjects – groundwater location, supplies, and quality, natural hazard mitigation, soil analysis, agricultural land-use questions, and geology-related issues. In addition to specific reports and publications, the WGNHS makes maps (topographic, wellhead, town survey) available to the general public and public officials and agencies.

Further information on the WGNHS can be obtained at <http://www.uwex/wgnhs>.

D. The Center for Land Use Education

The Center for Land Use Education focuses on land use planning and is a joint venture between the University of Wisconsin-Stevens Point College of Natural Resources, UW-Extension, and other UW system institutions. The mission of the Center is to provide resources to communities for land use planning, plan and ordinance administration, and policy development. The Center offers continuing education opportunities to zoning boards, local officials, state and local agencies with zoning/land use responsibilities, and related private sector consultants. The Center publishes a quarterly newsletter *The Land Use Tracker* and makes available free or for a minimal charge factsheets and other materials, including the *Zoning Board Handbook*.

Further information on the Center can be obtained at <http://www.uwsp.edu/cnr/landcenter>.

6.40 REGIONAL RESOURCES

The effect of actions taken in a waterway at one place frequently extends beyond the local area and may require a more regionally based response. Contact information for the regional planning commissions can be found in Appendix C of this Guidebook.

A. Regional Planning Commissions

Regional planning commissions are quasi-government organizations which coordinate physical, social, and economic development projects in a designated region and facilitate intergovernmental cooperation, as well as the sharing of information. Regional planning commission boundaries are based on common topographical, geographical, and shared economic interests.

The regional planning commissions are designated by the state and federal governments as clearinghouses for information on natural resource use and stewardship, agriculture and/or land use, land use records, waste disposal, transportation and economic development, and as one of the agencies that reviews federal grant applications for conformance with adopted regional and local plans and development priorities. All of the regional planning commissions are also involved in the creation of map inventories, including GIS mapping. While activities in which regional planning commissions are involved vary, all of the commissions share a commitment to involving citizens in planning decisions.

6.50 RELATED ORGANIZATIONS

Numerous organizations exist which can assist a community in managing its floodplain and shoreland areas. Detailed contact information can be found in Appendix C of this Guidebook.

A. The Association of State Floodplain Managers

The Association of State Floodplain Managers (ASFPM) is a national organization made up of federal, state, and local governments, researchers, and private-sector professionals who are involved in floodplain management, flood hazard mitigation, and flood preparedness (including warning and recovery), as well as others who work with the NFIP. ASFPM traces its history to 1976-1977, when state floodplain officials in Wisconsin and five other states bordering the Great Lakes expressed concern about apparent conflicts between the requirements in the NFIP legislation and previously established state mapping standards. The founders of ASFPM were also concerned that a key partner in the floodplain management and mitigation partnership – local units of government – was being ignored by the federal legislation.

Shifting from reacting to the NFIP to outreach, the ASFPM represents its membership's views on flood-related issues in national forums, develops and distributes educational materials, sponsors workshops and an annual national conference, and offers a Certified Floodplain Manager (CFM) program. This is a national professional certification effort that encourages self-study and attendance at training courses, applicant testing of a wide range of knowledge areas, such as the overall context of floodplain management, floodplain mapping, NFIP regulatory standards and sanctions, inspections and other administrative procedures, flood insurance coverage and rating, flood hazard mitigation, wetlands natural and beneficial functions, and multi-objective management. Renewal of a certification requires proof of continuing education and/or attendance at workshops or related technical meetings.

Further information regarding ASFPM can be obtained at <http://www.floods.org>.

B. Wisconsin Association for Floodplain, Stormwater, and Coastal Management

The Wisconsin Association of Floodplain, Stormwater and Coastal Management (WAFSCM) is the Wisconsin-based chapter of the ASFPM. While the national organization has Wisconsin roots, WAFSCM is the first chapter exclusively serving the state. According to its mission statement, the organization is “dedicated to promoting sound floodplain, stormwater, and coastal management in the interest of the citizens of Wisconsin.” Like the national organization, WAFSCM offers training opportunities to its members (including an annual conference) and provides a forum for discussion of issues related to floodplains, stormwater, and coastal management.

Further information in WAFSCM can be obtained by emailing dfowler@mmsd.com.



APPENDIX A

ACRONYMS AND TERMS

This list contains many of the acronyms and terms that frequently surface when dealing with floodplain, shoreland, and shoreland-wetland zoning issues. While every effort has been made to make the list as complete as possible, the list is not comprehensive and should not be used as a substitute for appropriate program guidance or legal advice.

Acronym	Definition
BFE	Base Flood Elevation
BOA	Board of Appeals or Adjustment
CAV	Community Assistance Visit
CFR	Code of Federal Regulations
CFS	Cubic Feet Per Second
CLOMA	Conditional Letter of Map Amendment
CLOMR	Conditional Letter of Map Revision
DFIRM	Digital Flood Insurance Rate Map
DHS	Department of Homeland Security
DNR	Department of Natural Resources
DOT	Department of Transportation
FBFM	Flood Boundary Floodway Map (FEMA)
FBFW	Flood Boundary Floodway Map (DNR)
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FIS	Flood Insurance Study
FPE	Flood Protection Elevation
LOMA	Letter of Map Amendment
LOMC	Letter of Map Change
LOMR	Letter of Map Revision
LOMR-F	Letter of Map Revision Based on Fill
NFIP	National Flood Insurance Program
NGVD	National Geodetic Vertical Datum
OHWM	Ordinary High-Water Mark
PUD	Planned Unit Development
RFE	Regional Flood Elevation
SFHA	Special Flood Hazard Area
WWI	Wisconsin Wetland Inventory

Term	Definition
100-year Flood	The flood magnitude expected to be equaled or exceeded, on average, once in 100 years. A regulatory standard used by federal agencies and most states to administer floodplain management programs; it is used by the National Flood Insurance Program (NFIP) as the basis for insurance requirements nationwide. A 100-year flood has a 26-percent chance of occurring every 30 years.
100-year Floodplain	The boundary of a flood that has a one-percent chance of being equaled or exceeded in any given year.
Accessory Structure or Use	Any facility, structure, building, or use necessary or incidental to the principal use of a property, structure, or building. Any non-principal structure(s) on a lot (e.g., a tool shed). A detached subordinate structure or a use that is clearly incidental to and customarily found in connection with the principal structure or use to which it is related and which is located on the same lot as that of the principal structure or use.
Approximate Studies	Flood mapping that shows the approximate outline of the base floodplain. An approximate study does not produce a base flood elevation.
Base Flood	A flood that has a one-percent probability of being equaled or exceeded in any given year. Also referred to as a 100-year flood.
Base Flood Depth	A measurement of the base flood in feet above ground used for shallow flooding.
Base Flood Elevation (BFE)	The elevation shown on a Flood Insurance Rate Map (FIRM) that indicates the water surface elevation resulting from a flood that has a one-percent chance of equaling or exceeding that level in any given year. The elevation of the crest of the base flood or 100-year flood. (See also RFE)
Base Floodplain	The area of water and land inundated during the crest of the base flood. Also referred to as the Special Flood Hazard Area (SFHA) on National Flood Insurance Program (NFIP) maps.
Basement	Any floor level below grade. Any enclosed area of a building having its floor sub-grade (below ground level) on all sides.
Board of Appeals/Adjustment (BOA)	A locally appointed board authorized to hear and approve requests for variances or special exceptions and appeals of decisions made by the local zoning official. Called the

Term	Definition
Buffer	Board of Appeals in incorporated areas and the Board of Adjustment in unincorporated areas.
Bulkhead Line	An area established to protect one type of land use from the undesirable characteristics of another. An area adjacent to a lake, river, stream, or wetland edge where critically important ecological processes and water pollution control functions take place. Development and other activities in such areas may be restricted.
Certificate of Compliance	A geographic line along a reach of navigable water that has been adopted by a municipal ordinance and which allows limited filling between this bulkhead line and the original ordinary high water mark, except where such filling is prohibited by ordinance floodway provisions.
Coastal Floodplain	A document issued to a property owner by a community certifying the construction and the use of land or a building, the elevation of fill, or the lowest floor of a structure is in compliance with all ordinance provisions.
Code of Federal Regulations (CFR)	An area along the coast of Lake Michigan or Lake Superior that is inundated by a regional flood and is also subject to additional hazards from wave run-up.
Community	The codification of the general and permanent rules published in the Federal Register by the Executive departments and agencies of the federal government. The Code is divided into 50 titles that represent broad areas subject to regulation. The master coding system to identify federal agency regulations that have been published in the Federal Register.
Community	A political entity that has the authority to adopt and enforce ordinances for the area under its jurisdiction. A political subdivision of a state or other authority (including any Native American tribe or authorized tribal organization that has zoning and building code jurisdiction over a particular area having special flood hazards and participates in the National Flood Insurance Program (NFIP), or a political subdivision of a state or other authority that is designated to develop and administer a mitigation plan by political subdivisions.

Term	Definition
Conditional Use	A use that is permitted by a zoning ordinance provided that certain conditions specified in the ordinance are met and that a permit is granted by a Board of Appeals, Planning and Zoning commission or, where appropriate, a city or village planning agency or governing body. A use that, because of its potential impact on surrounding areas and structures, is permitted only upon review and regulatory approval. Also referred to as a “Special Exception.”
Contour	A line of equal elevation on a topographic (or contour) map.
Contour Map	A map that shows points with the same elevation as connected by a contour line. Also known as a Topographic Map.
Countywide Map	A flood insurance rate map that shows flooding information for a county, including incorporated communities within the county.
Detailed Studies	Flood mapping that produces base flood elevations, floodways, and other pertinent flood data.
Developed Area	As defined in Chapter NR 116, Wisconsin Administrative Code, an area within a floodplain that contains a minimum of 20 potential residential lots or a minimum of five acres of land zoned commercial, industrial, or institutional, where existing structures constitute a minimum of 50 percent of the structures that could be accommodated by a particular zoning classification’s density requirements. The limits of the developed area are defined by a line connecting the existing structures to the outer perimeter of the majority of the structures. Vacant lots within that boundary are treated the same as lots with existing structures.
Digitized Flood Insurance Rate Map (DFIRM)	The official map of a community, presented in electronic format, on which Special Flood Hazard Areas and the risk premium zones applicable to a community have been delineated. A map on which the 100-year (one-percent annual chance) and 500-year (0.2 percent annual chance) floodplains, base flood elevation, and risk premium zones (and floodway information on FIRMs) are delineated to enable insurance agents to issue accurate flood insurance to homeowners in communities participating in the National Flood Insurance Program (NFIP). Information on the map is based on historic, meteorological, hydrologic, and hydraulic data as well as

Term	Definition
Discharge	open-space conditions, flood-control works, and development.
Emergency Action Plan (EAP)	The amount of water that passes a point in a given period of time. Rate of discharge is usually measured in cubic feet per second (cfs). The amount of water that passes a point in a given period of time.
Equalized Assessed Value	A predetermined plan of action to be taken to reduce the potential for loss of life and property damage.
Existing Manufactured/Mobile Home Park/Subdivision	The value associated with a structure or parcel of property, based on the assessed value as determined by the local assessor, with any adjustments made to account for an assessment that does not reflect full value.
Expansion to Existing Mobile/Manufactured Home Park	A parcel (or contiguous parcels) of land divided into two or more mobile home lots for rent or sale on which the construction of facilities for servicing the lots (including, at a minimum, the installation of utilities, final site grading or the pouring of concrete pads, and/or the construction of streets) is in existence before adoption of a regulating ordinance.
Farm Drainage Ditch	The preparation of additional sites by the construction of facilities for servicing the lots on which mobile homes are to be placed; includes installation of utilities, final site grading or pouring of pads, and/or construction of streets.
Federal Emergency Management Agency (FEMA)	Any artificial channel that drains water from lands currently used for agricultural purposes.
Flash Flooding	The federal agency which provides emergency disaster services and which administers the National Flood Insurance Program (NFIP).
Flood Boundary Floodway Map (FBFW)	Localized flooding characterized by a great volume of water and a short duration. A flood in a hilly and mountainous area that may come minutes after a heavy rain; also occurs in urban areas where pavements and drainage improvements speed runoff to a stream.
Flood Boundary Floodway Map (FBFW)	A map prepared by the Federal Emergency Management Agency (FEMA) designating the floodway. A companion map to the Flood Hazard Boundary Map.

Term	Definition
Flood Frequency	The probability of a flood occurrence, generally determined from statistical analyses and expressed as occurring, on the average, once in a specified number of years or as a percent chance of occurring in any given year.
Flood Fringe	That portion of the floodplain outside of the floodway that is covered by flood water during a regional flood. The term is generally associated with standing, rather than flowing, water.
Flood Hazard Boundary Map (FHBM)	A map prepared by the Federal Emergency Management Agency (FEMA) designating approximate flood hazard areas; such a map does not contain floodway lines or regional flood elevations. The map forms the basis for both the regulatory and insurance elements of the National Flood Insurance Program (NFIP).
Flood Insurance Rate Map (FIRM)	The official map of a community, on which Special Flood Hazard Areas (SFHA) and the risk premium zones applicable to a community have been delineated. A map on which the 100-year (one-percent annual chance) and 500-year (0.2 percent annual chance) floodplains, base flood elevations, and risk premium zones (and floodway information on FIRMs) are delineated to enable insurance agents to issue accurate flood insurance to homeowners in communities participating in the National Flood Insurance Program (NFIP). Information on the map is based on historic, meteorological, hydrologic, and hydraulic data as well as open-space conditions, flood-control works, and development.
Flood Insurance Study (FIS)	A written document that is a technical engineering examination, evaluation, and determination of the local flood hazard areas. The study includes maps designating those areas affected by the regional flood and provides both flood insurance rate zones and regional flood elevations and may provide floodway lines. FIS maps form the basis for both the regulatory and insurance elements of the National Flood Insurance Program (NFIP). The document also provides both the historic flood information and data used to compile the flood elevations along rivers and streams studied within a community. An examination, evaluation, and determination of flood hazards and, if appropriate, corresponding water-surface elevations. The resulting reports are used to develop Flood Insurance Rate Maps (FIRMs). A report published by the Federal Emergency Management Agency (FEMA) for a community in conjunction with the community's Flood Insurance Rate Map (FIRM);

Term	Definition
Flood of Record	contains such background data as the base flood discharges and water surface elevations that were used to prepare the FIRM.
Flood Profile	The highest known flood, the elevation of which can be determined through the use of physical or photographic data.
Flood Protection Elevation	A graph or longitudinal profile line showing the relationship of the water surface elevation of a flood event to locations of land surface elevations along a stream or river.
Flood Storage	An elevation of two feet above the regional flood elevation.
Flood or Flooding	Those floodplain areas where the storage of flood waters has been taken into account in reducing a regional flood discharge.
Flood or Flooding	A general and temporary condition of partial or complete inundation of normally dry land areas caused by the overflow or rise of inland waters; the rapid accumulation or runoff of surface waters from any source; an inundation caused by waves or currents of water exceeding anticipated cyclical levels along the shores of Lake Michigan and Lake Superior; and/or a sudden increase caused by an unusually high water level in a natural body of water, accompanied by a severe storm or by an unanticipated force of nature such as a seiche or by some similarly unusual event.
Floodplain	Any land area susceptible to being inundated by flood waters from any source. Land which has been or may be covered by flood during a regional flood. The floodplain includes the floodway, floodfringe, shallow depth flooding, flood storage, and coastal floodplain areas.
Floodplain Island	A natural geologic land formation within a floodplain surrounded, but not covered, by flood water during a regional flood.
Floodplain Management	The full range of public policy and actions for ensuring wise use of floodplains, including everything from the collection and dissemination of flood data to the acquisition of floodplain lands and the enactment and administration of codes, ordinances, and statutes for land use in the floodplain.
Floodproofing	Any combination of structural provisions, changes, or adjustments to properties and structures, water and sanitary facilities, and the contents of buildings subject to flooding for

Term**Definition**

	<p>the purpose of reducing or eliminating flood damage. Protective measures added to or incorporated in a building that is not elevated above the base flood elevation to prevent or minimize flood damage.</p>
Floodway	<p>The channel of a river or stream and those portions of the floodplain adjoining the channel required to carry the regional flood discharge. The stream channel and that portion of the adjacent floodplain that must remain open to permit passage of the base flood.</p>
Footprint	<p>The area covered by human-caused changes to a site, including the house, garage, paved surfaces such as driveways, paths, and walkways.</p>
Freeboard	<p>A flood protection elevation requirement designed as a safety factor; usually expressed in terms of a specified number of feet above a calculated flood level. Freeboard compensates for the effects of many factors. These factors include ice jams, debris accumulation, wave action, obstruction of bridge openings and floodways, the effects of urbanization on the hydrology of a watershed, the loss of flood storage areas from development, and/or the aggradation of a river or stream bed that contribute to flood heights greater than those calculated. The vertical distance between a stated water level and the top of a dam.</p>
Habitable Building	<p>Any building, or portion thereof, used or designed for human habitation.</p>
Hazard Mitigation	<p>Any cost-effective measure that will reduce the potential for damage to a facility from a disaster event.</p>
High Flood Damage Potential	<p>Potential damage resulting from flooding that is associated with any danger to life or health or any significant economic loss to a structure or building and its contents.</p>
High Water Mark	<p>The mark left by water at its highest level.</p>
Historic Structure	<p>Any structure that is (or may be) listed on the National Register of Historic Places, that is certified (or may be certified) as contributing to the historical significance of a registered historic district; that is individually listed on a state inventory of historic places, and/or is individually listed on a local inventory of historic places.</p>

Term	Definition
Hydraulic Floodway Lines	The lines that delineate those portions of a floodplain, including the channel, that are required to convey a regional flood discharge without any increase in regional flood heights.
Hydraulics	The science dealing with fluids in motion, which is used to determine how a quantity of water will flow through a channel or floodplain.
Hydrodynamic Force	The force of moving water, including the impact of debris and high velocities.
Hydrology	The science dealing with the distribution and circulation of water in the atmosphere, on land surfaces, and underground, which is used to determine flood flow frequencies.
Hydrostatic Pressure	The pressure put on a structure by the weight of standing water. The deeper the water, the more it weighs, and the greater the hydrostatic pressure.
Increase in Regional Flood Height	A calculated upward rise in a regional flood elevation equal to or greater than 0.01 foot, resulting from a comparison of existing conditions and proposed conditions that is directly attributable to development in a floodplain but not attributable to manipulation of mathematical variables (such as roughness factors, expansion and contraction coefficients, and discharge).
Insurable Structure	A walled and roofed building, other than a gas or liquid storage tank, that is principally above ground and affixed to a permanent site, as well as a manufactured home on a permanent foundation. Also includes a building while in the course of construction, alteration, or repair but does not include building materials or supplies intended for use in such construction, alteration, or repair, unless the materials or supplies are within an enclosed building on the premises.
Inundation Map	A map delineating the area that would be inundated in the event of a dam failure.
Jurisdictional Wetland	A wetland that is regulated by the U.S. Army Corps of Engineers under Section 404 of the Clean Water Act.
Land Use	The utilization of any piece of land, whether it is a lot, a plat, a tract, or acreage; the way in which land is being used. Any nonstructural use of unimproved or improved real estate.

Term	Definition
Land Use Plan	The proposed or projected utilization of land resulting from planning and zoning studies, usually presented in map form.
Letter of Determination Review (LODR)	An official letter from the Federal Emergency Management Agency (FEMA) in response to a request for review of a lender's flood hazard determination. The LODR either overturns the lender's finding, upholds it, or leaves it unchanged because insufficient information was provided.
Letter of Map Amendment (LOMA)	An official amendment (by letter) to an effective National Flood Insurance Program (NFIP) map. This establishes a property's location in relation to Special Flood Hazard Area (SFHA).
Letter of Map Change (LOMC)	A Letter of Map Amendment (LOMA) or a Letter of Map Revision (LOMR).
Letter of Map Revision (LOMR)	An official revision (by letter) to an effective National Flood Insurance Program (NFIP) map, which may change flood insurance risk zones, floodplain boundary delineations, planimetric features, and/or base flood elevations (BFEs).
Letter of Map Revision Based on Fill (LOMR-F)	An official revision (by letter) to an effective National Flood Insurance Program (NFIP) map, which is caused by the placement of fill on the property and which may change flood insurance risk zones, floodplain boundary delineations, planimetric features, and/or BFEs.
Mandatory Purchase	Under provisions of the Flood Disaster Protection Act of 1973, individuals, businesses, and others buying, building, or improving property located in identified Special Flood Hazard Areas (SFHAs) within participating communities are required to purchase flood insurance as a prerequisite for receiving any type of direct or indirect financial assistance when the building or personal property is the subject of, or security for, such assistance.
Manufactured/Mobile Home	A building transportable in one or more sections that is built on a permanent chassis and is designed for use with or without a permanent foundation when attached to utilities; includes "double-wides." Does not include recreational vehicles.
Map Amendment	A change to an effective National Flood Insurance Program (NFIP) map that results in the exclusion from the Special Flood

Term	Definition
Map Revision	Hazard Area (SFHA) of an individual structure or a legally described parcel of land that has been inadvertently included.
Mitigation	A change to an effective National Flood Insurance Program (NFIP) map that is accomplished by a Letter of Map Revision (LOMR) or a Physical Map Revision (PMR).
Mobile Recreational Vehicle	When used in the context of environmental assessments, it refers to an action designed to lessen or reduce adverse impacts. In the context of flooding, it refers to specific activities to remove structures from flood hazard areas or to protect structures from flooding.
National Environmental Policy Act (NEPA)	A recreational vehicle that is carried, towed, or self-propelled, is licensed for highway use (if registration is required), and is always capable of being driven or towed by a licensed vehicle.
National Flood Insurance Program (NFIP)	The federal law establishing a national policy for the protection and maintenance of the environment. NEPA provides a broad planning process that requires all federal agencies to ensure that the federal agency has considered the effects of their actions (any action involving federal funding or assistance) on the environment before deciding to fund and implement a proposed action and that environmental information is made available to other public officials and citizens before agency decisions are made and before actions are taken.
Navigable Waterway	A federal program that makes flood insurance available to owners of property in participating communities nationwide through the cooperative efforts of the federal government and the private insurance industry. The NFIP encourages state and local governments to exercise sound floodplain management to reduce losses caused by flooding.
Nonconforming Structure	A waterway that has a bed and banks and on which a canoe can be floated at some time each year (even if only during spring floods). Small intermittent streams that are seasonally dry may meet the test of navigability.
Nonconforming Structure	A building or other structure that does not conform to the current dimensional requirements of a zoning ordinance. Also, a building or structure that is being used for a non-conforming use. An existing lawful structure or building that is not in conformity with the dimensional or structural requirements of

Term	Definition
Nonconforming Use	ordinances subsequently adopted to the building or structure's construction.
Non-structural Flood Protection Measures	A use that lawfully existed prior to the adoption of a zoning ordinance or zoning amendment that does not meet current standards. A land use that does not comply with current use restrictions found in a zoning ordinance or ordinance amendment. An existing lawful use or accessory use of a structure or building that is not in conformity with subsequently adopted ordinance restrictions.
Non-structural Flood Protection Measures	Administrative tools for controlling flooding and flood damage, including regulations on development, building codes, property acquisition and structure relocation, and modification of existing buildings.
No-rise Certification	A certification by an engineer that a project will not cause an increase in flood heights.
Obstruction to Flow	Any development that physically blocks the conveyance of flood waters so that the development by itself (or in conjunction with any future similar development) will cause an increase in regional flood height.
Official Floodway Lines	The lines shown on an official floodplain zoning map and used for regulatory purposes. The lines are established assuming that the area landward of the floodway lines will not be available to convey flood flows.
Open Space Use	A use that has a relatively low flood damage potential (such as uses associated with agriculture, recreation, parking, storage yards, or certain sand and gravel operations).
Ordinary High Water Mark (OHWM)	The point on a bank or shore up to which the presence and action of surface water is so continuous as to leave a distinctive mark by erosion, destruction or prevention of terrestrial vegetation, predominance of aquatic vegetation, or other easily recognized characteristic.
Permitted Use	A use specifically authorized by a particular zoning district.
Physical Map Revision (PMR)	An official re-publication of a community's National Flood Insurance Program (NFIP) map to effect changes to base (one-percent annual chance) flood elevations, floodplain boundary delineations, regulatory floodways, and planimetric

Term**Definition**

	<p>features. These changes typically occur as a result of structural works or improvements, annexations resulting in additional flood hazard areas, or correction to base flood elevations or Special Flood Hazard Areas (SFHAs). The community's chief executive officer must submit scientific and technical data to FEMA to support the request for a PMR. The data will be analyzed, and the map will be revised if warranted. The community is provided with copies of the revised information and is afforded a review period. When base flood elevations are changed, a 90-day appeal period is provided. A six month period for formal approval of the revised map(s) is also provided.</p>
Ponding	Runoff that collects in depressions and cannot drain out, creating a temporary pond.
Post-FIRM Building	For insurance rating purposes, a building that was constructed or substantially improved after December 31, 1974 or after the effective date of the initial Flood Insurance Rate Map (FIRM) of a community (whichever is later). A post-FIRM building is required to meet the National Flood Insurance Program's (NFIP) minimum Regular Program flood protection standards.
Pre-FIRM Building	For insurance rating purposes, a building constructed or substantially improved on or before December 31, 1974 or before the effective date of the initial Flood Insurance Rate Map (FIRM) of the community, whichever is later. Most pre-FIRM buildings were constructed without taking the flood hazard into account.
Principal Structure	The building used for the principal land use; typically the largest structure on a lot.
Private Sewage System	A sewage treatment and disposal system serving a single structure with a septic tank and soil absorption field located on the same parcel as the structure. The term also means a state-approved alternative sewage system, such as a substitute for a septic tank or soil absorption field, a holding tank, a system serving more than one structure, or a system located on a different parcel of land than the structure.
Profile	A graph that shows elevations of various flood events.
Regional Flood	As defined in Chapter NR 116 of the Wisconsin Administrative Code, a flood determined to be representative

Term	Definition
Regional Flood Elevation (RFE)	of large floods known to have occurred in Wisconsin or which may be expected to occur on a particular lake, river, or stream once every 100 years, based on a statistical analysis of lake level or streamflow records available for the watershed and/or an analysis of rainfall and runoff characteristics in the watershed.
Regular Phase	The elevation shown on a floodplain map that indicates the water surface elevation resulting from a flood that has a one-percent chance of equaling or exceeding that level in any given year. The elevation of the crest of the regional flood or 100-year flood. (Wisconsin only).
Regular Program	The phase of community participation in the National Flood Insurance Program (NFIP) that begins on the date of the Flood Insurance Rate Map (FIRM) or when the community adopts an ordinance that meets the minimum requirements of the NFIP and adopts the technical data provided with the FIRM whichever is later. Also referred to as the Regular Program.
Regular Program	The phase of a community's participation in the National Flood Insurance Program (NFIP) where more comprehensive floodplain management requirements are imposed and higher amounts of insurance are available based on risk zones and elevations determined in a Flood Insurance Study. Also called Regular Phase.
Regular Program Community	A community wherein a Flood Insurance Rate Map (FIRM) is in effect and full limits of coverage are available under the National Flood Insurance Program (NFIP).
Regulatory Floodway	The channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than a designated height.
Remapping	The Federal Emergency Management Agency (FEMA) schedules remapping of communities to take into consideration natural changes within the floodplain and regulatory floodways and to allow for changes as a result of land use and development, land contour changes, and new information gained from advanced technology. The results of FEMA's remapping efforts are published every six months in a compendium of flood map changes in the Federal Register.

Term	Definition
Repetitive Loss Structure	A structure, covered by flood insurance, that has incurred flood-related damage on two occasions during a 10-year period, in which the cost of repairing the flood damage (on average) equaled or exceeded 25 percent of the market value of the structure at the time each flood event took place. As defined in Chapter NR 199, Wisconsin Administrative Code, any structure with two or more flood losses, each greater than \$1,000 in any 10-year period since 1978.
Restudy	A new Flood Insurance Study (FIS) for all or part of a community.
Revision	A change to a floodplain map based on new data submitted to the Federal Emergency Management Agency (FEMA).
Riprap	A layer of large, uncoursed stones, broken rock, or precast blocks placed in random fashion on the upstream slope of an embankment dam, on a reservoir shore, or on the sides of a channel, as protection against wave and ice action. A facing layer or protective cover of stones placed to prevent erosion or the sloughing-off of a structure or embankment.
Riverine Flooding	Flooding that occurs along a channel; when a channel receives too much water and the excess flows over its banks and into an adjacent floodplain.
Robert T. Stafford Disaster Relief and Emergency Assistance Act	Legislation passed in 1988 authorizing the Federal Emergency Management Agency's (FEMA's) current disaster assistance programs and the Hazard Mitigation Grant Program (HMGP). Also referred to as the Stafford Act.
Shallow Flooding	Flooding that occurs in flat areas where a lack of channels means water cannot easily drain away.
Sheet Flow Flooding	A form of shallow flooding, where floodwater spreads out over a large area at a relatively uniform depth, usually occurring after an intense or prolonged rainfall.
Shoreland	As defined in Chapter NR 115 of the Wisconsin Administrative Code, and Section 59.692 of the Wisconsin Statutes, an area within 1,000 feet of a lake, pond, or flowage or within 300 feet of a river or stream or to the landward side of the floodplain (whichever distance is greater).

Term	Definition
Shoreland-Wetland Zoning District	A zoning district, comprised of wetlands greater than five (5) acres in the shoreland zone.
Shoreline	The line at which the land and water meet.
Special Exception	See Conditional Use.
Special Flood Hazard Area (SFHA)	An area on a Flood Insurance Rate Map (FIRM) or Flood Hazard Boundary Map (FHBM) that identifies an area that has a one-percent chance of being flooded in any given year. Also referred to as the base floodplain. The base floodplain displayed on Federal Emergency Management Agency (FEMA) maps; includes the A and V Zones.
State Hazard Mitigation Program (SHMP)	One of three categories of assistance available to all U.S. states and territories through the Flood Mitigation Assistance Program of the Federal Emergency Management Agency (FEMA).
Statutory Authority	The powers granted to an entity by state law.
Storage	The retention of water or delay in runoff either by planned operation (as in a reservoir) or by temporarily filling the overflow areas (as in the progression of a flood crest through a natural stream channel).
Structural Flood Control	Measures that control floodwaters by construction of barriers or storage areas or by modifying or redirecting channels.
Structure	Any man-made object with form, shape, and utility either permanently or temporarily attached to or placed on ground, a river bed, a stream bed, or lakebed. A walled and roofed building (other than a gas or liquid storage tank) that is principally above ground and affixed to a permanent site, as well as a manufactured home on a permanent foundation.
Substantial Damage	Damage of any origin sustained by a structure where the cost of restoring the structure to its pre-damaged condition would equal or exceed 50 percent of the market value of the structure before the damage occurred. As defined in Chapter NR 116, Wisconsin Administrative Code, flood damage to any structure that exceeds 50 percent of the present equalized assessed value of the structure.
Unnecessary Hardship	The Wisconsin Supreme Court has stated that “unnecessary

Term**Definition**

	<p>hardships for area variance cases” is defined as “ ‘ [w]hether compliance with the strict letter of the restrictions governing area, set backs, frontage, height, bulk or density would unreasonably prevent the owner from using the property for a permitted purpose or would render conformity with such restrictions unnecessarily burdensome’ ” due to special conditions affecting a particular property that were not self-created. For use variance cases, unnecessary hardship is defined as a situation where a property would have no reasonable use in the absence of a variance.</p>
Variance	<p>1) A grant of relief by a Board of Adjustment or Board of Appeals from the terms of a land use, zoning, or building code regulation. 2) Authorization by a Board of Adjustment or Appeals for the construction or maintenance of a building or structure in a manner that is inconsistent with dimensional standards contained in a floodplain zoning ordinance. Permission obtained from governmental zoning authorities to build a structure or conduct a use that is expressly prohibited by the current zoning laws. An exception from the zoning laws that gives some discretion to current zoning. An action that authorizes the construction or maintenance of a building in a manner inconsistent with the standards of a zoning ordinance, granted in cases of unnecessary hardship as a result of special conditions unique to a property.</p>
Water Surface Profile	<p>A graphical representation showing the elevation of the water surface of a watercourse for each position along a reach of river or stream at a certain flood flow. A water surface profile of a regional flood is used in regulating floodplain areas.</p>
Watershed	<p>The area of land that contributes surface runoff to a given point in a drainage system. An area of land that drains water, sediment, and dissolved materials to a common receiving body or outlet. The term is not restricted to surface water runoff and includes interactions with subsurface water. In an urban setting, a watershed is considered to be all of the land that contributes runoff to a particular water body; all land that serves as a drainage for a specific stream or river. The entire region or area contributing runoff or surface water to a particular watercourse or body of water. An area that drains into a lake, stream, or other body of water.</p>
Wet Floodproofing	<p>Protecting a building from flood damage by using flood-resistant materials below the flood level and elevating things</p>

Term	Definition
Wetland	subject to flood damage above the flood level. An area where water is at, near, or above the land surface long enough to be capable of supporting aquatic or hydrophytic vegetation and which has soils indicative of wet conditions.
Wisconsin Wetlands Inventory (WWT)	Listing of wetlands in Wisconsin developed by the Department of Natural Resources (DNR).
Write Your Own Program (WYO)	A cooperative undertaking of the insurance industry and the Federal Insurance Administration, where private insurance carriers issue and service National Flood Insurance Program (NFIP) policies.
Zone A	Riverine flood zone. The base floodplain is mapped by approximate methods. Base flood elevations are not determined. Often called unnumbered A Zone or approximate A Zone.
Zone A1-30	Riverine flood zone. Base floodplain is mapped using studies. Base flood elevations are determined and shown on map. Older format. Often know as numbered A Zones.
Zone AE	Riverine flood zone. Base floodplain is mapped using studies. Base flood elevations are determined and shown on map. Replaced mapping format using Zone A1-30 notation.
Zone A0	Riverine flood zone. May occur in coastal areas under set conditions. Base floodplain with sheet flow, ponding or shallow flooding. Base flood depths (feet above ground) are provided.
Zone AH	Riverine flood zone. Shallow flooding base floodplain. Base flood elevations are provided.
Zone B	Areas of moderate flood hazard, usually the area between the limits of the 100-year and 500-year floods. Also used to designate base floodplains of lesser hazards, such as areas protected by levees from the 100-year flood, or shallow flooding areas with average depths of less than one foot or drainage areas less than one square mile. Older format.
Zone C	Areas of minimal flood hazard, usually depicted on map as above the 500-year flood level. May have ponding and local drainage problems which do not warrant a detailed study or designation as base floodplain. Older format.

Term	Definition
Zone V	Coastal flood zone. The coastal area subject to velocity hazard (wave action) where base flood elevations are not determined.
Zone VE	Coastal flood zone. The coastal area subject to velocity hazard (wave action) where base flood elevations are determined.
Zone X (shaded)	Areas of moderate flood hazard, usually the area between the limits of the 100-year and 500-year floods. Also used to designate base floodplains of lesser hazards, such as areas protected by levees from the 100-year flood, or shallow depth flooding areas with average depths of less than one foot or drainage areas less than one square mile. Replaced mapping format using B Zone notation.
Zone X (unshaded)	Areas of minimal flood hazard, usually depicted on map as above the 500-year flood level or area protected by a levee from the 100-year flood, if applicable. May have ponding and local drainage problems which do not warrant a detailed study or designation as base floodplain. Replaced mapping format using C Zone notation.
Zoning	1) The regulation of structures and uses of property within designated districts or zones. 2) A set of local government regulations and requirements that govern the use, placement, spacing, and size of buildings and lots (as well as other types of land uses) within specific areas designated as zones primarily dedicated to certain land use types or patterns. 3) Zoning regulates and affects such things as use of the land, lot sizes, types of structure permitted, building heights, setbacks and density (the ratio of land area to improvement area).
Zoning Agency	A commission, board, committee, or agency created or designated by the governing body of a municipality that acts on matters pertaining to planning and/or zoning.
Zoning Map	A graphic depiction of the zones or districts within a municipality, region, or area for which the zoning ordinance is applicable.
Zoning Ordinance	Text, together with zoning map(s), that spells out the terms and conditions of zoning within a municipality; includes all of the standards, procedures and requirements; placed in legal form to be adopted by the local governing body.



APPENDIX B

GENERAL PROJECT REVIEW PROCESS

A GUIDE FOR LOCAL OFFICIALS TO THE GENERAL PROJECT REVIEW PROCESS FOR PROJECTS IN THE FLOODPLAIN

Local officials are responsible for reviewing projects proposed in the floodplain and answering any questions from the applicant. They are the primary interface between the applicant and any other state or federal agencies. The Wisconsin Department of Natural Resources (DNR) and the Federal Emergency Management Agency (FEMA) will provide technical advice to local officials during the review process. The DNR and FEMA are responsible for final approval only in specific cases.

The typical review process begins with an individual presenting an application for a proposed development to the local official. The local official must review the application for a number of issues including where the proposed building site is in relation to the floodplain. The process outlined below will assist local officials in meeting the minimum review criteria for the State of Wisconsin for projects in the floodplain.

Step 1 Verify the project site's location. Is the site located in a mapped flood zone?

- No. The requirements of Chapter NR 116, Wisconsin Administrative Code, the National Flood Insurance Program and local floodplain ordinances do not apply. Review project for other considerations.
- Yes. If in an area of detailed study, then go to **Step 2**. If in an approximate area, then go to **Step 8**. [See Chart 1c].
- If the applicant does not agree that the proposed development site is located within a mapped flood zone, then a Letter of Map Amendment or a Letter of Determination Review may be filed. Contact FEMA at 1-877-336-2627.

Step 2 Is the project located in the flood fringe [FF, A1-30, AE, A0, V Zones] or the floodway [FW]?

- If flood fringe, then go to **Step 3**. [See Chart 1a]
- If floodway, then go to **Step 5**. [See Chart 1b]
- If the applicant does not agree that the proposed development site is located within the determined flood zone, then a Letter of Map Amendment or a Letter of Determination Review may be filed. Contact FEMA at 1-877-336-2627.
- If the applicant wishes to remove the property from the determined flood zone, then a

Letter of Map Revision Based on Fill (LOMR-F) may be filed. Applicants should be informed that they must meet the requirements of s. NR 116.18, Wis. Admin. Code as well as 44 CFR 65.5. Specifically, no property may be removed from the flood fringe unless technical data regarding the proposed development's effect on flood heights has been submitted and approved, the structure is placed on fill to the flood protection elevation, the area filled extends at least 15 feet beyond the limits of the structure, and the property has dryland access. Contact the DNR Regional office for detailed information.

Step 3 For projects in the flood fringe, determine the project's use and if it is a new structure or an addition/modification.

- If it is a prohibited use, then deny the permit application.
- If it is a permitted use, then issue the permit after ensuring it complies with the following standards for the flood zone [s. NR 116.13 (1), Wis. Admin. Code] as well as any other applicable standards:
 - compatible with local land use plans or if no such plan has been adopted, with permitted uses in adjoining districts;
 - does not cause an obstruction to flood flows of any drainage systems to the tributary; and
 - does not affect the conveyance capacity of a stream system such that it causes a rise in regional flood heights or discharges.
- If it is a nonconforming use or structure, then go to **Step 4**.
- If the applicant does not agree with the determination of the local official, then an appeal may be filed with the local Board of Adjustment/Appeals.
- If the applicant wishes to remove the property from the determined flood zone, then a Letter of Map Revision Based on Fill (LOMR-F) may be filed. Applicants should be informed that they must meet the requirements of s. NR 116.18, Wis. Admin. Code as well as 44 CFR 65.5. Specifically, no property may be removed from the flood fringe unless technical data regarding the proposed development's effect on flood heights has been submitted and approved, the structure is placed on fill to the flood protection elevation, the area filled extends at least 15 feet beyond the limits of the structure, and the property has dryland access. Contact the DNR Regional office for detailed information.

Step 4 Review the project cost (including labor and materials based on market rates) in order to determine if the cost is equal to, more than or less than 50% of the current equalized assessed value of the existing structure.

- If the cost of the project is less than 50% of the current equalized assessed value of the structure, then issue the permit with the requirement of elevation or floodproofing for the addition.
- If the cost of the project is equal to or more than 50% of the current equalized assessed

value of the structure then issue the permit with the requirement of elevation or floodproofing for the entire structure and compliance with dryland access provisions.

- If the applicant does not agree with the determination of the local official, then an appeal may be filed with the local Board of Adjustment/Appeals.
- If the applicant wishes to remove the property from the determined flood zone, then a Letter of Map Revision Based on Fill (LOMR-F) may be filed. Applicants should be informed that they must meet the requirements of s. NR 116.18, Wis. Admin. Code as well as 44 CFR 65.5. Specifically, no property may be removed from the flood fringe unless technical data regarding the proposed development's effect on flood heights has been submitted and approved, the structure is placed on fill to the flood protection elevation, the area filled extends at least 15 feet beyond the limits of the structure, and the property has dryland access. Contact the DNR Regional office for detailed information.

Step 5 For projects in the floodway, determine the project's use and if it is a new structure or an addition/modification.

- If it is a prohibited use, then deny the permit application.
- If it is a permitted use, then go to **Step 6**.
- If it is a nonconforming use or structure, then go to **Step 7**.
- If the applicant does not agree with the determination of the local official, then an appeal may be filed with the local Board of Adjustment/Appeals.
- If the applicant wishes to remove the property from the determined flood zone, then a Letter of Map Revision Based on Fill (LOMR-F) may be filed. Applicants should be informed that they must meet the requirements of s. NR 116.18, Wis. Admin. Code as well as 44 CFR 65.5. Specifically, no property may be removed from the flood fringe unless technical data regarding the proposed development's effect on flood heights has been submitted and approved, the structure is placed on fill to the flood protection elevation, the area filled extends at least 15 feet beyond the limits of the structure, and the property has dryland access. Contact the DNR Regional office for detailed information.

Step 6 If the use is permitted then the applicant develops and submits an engineering analysis to DNR for review and approval to determine the project's effect on flood heights.

- If project will cause a rise in flood heights greater than or equal to 0.01 foot, deny the permit unless the criteria set forth in s. NR 116.11 (3), Wis. Admin. Code, are met. These include obtaining easements from any affected property owner and notifying all affected communities.
- If the project will cause less than 0.01 foot rise in flood heights, then issue permit.
- If the applicant wishes to remove the property from the determined flood zone, then a

Letter of Map Revision Based on Fill (LOMR-F) may be filed. Applicants should be informed that they must meet the requirements of s. NR 116.18, Wis. Admin. Code as well as 44 CFR 65.5. Specifically, no property may be removed from the flood fringe unless technical data regarding the proposed development's effect on flood heights has been submitted and approved, the structure is placed on fill to the flood protection elevation, the area filled extends at least 15 feet beyond the limits of the structure, and the property has dryland access. Contact the DNR Regional office for detailed information.

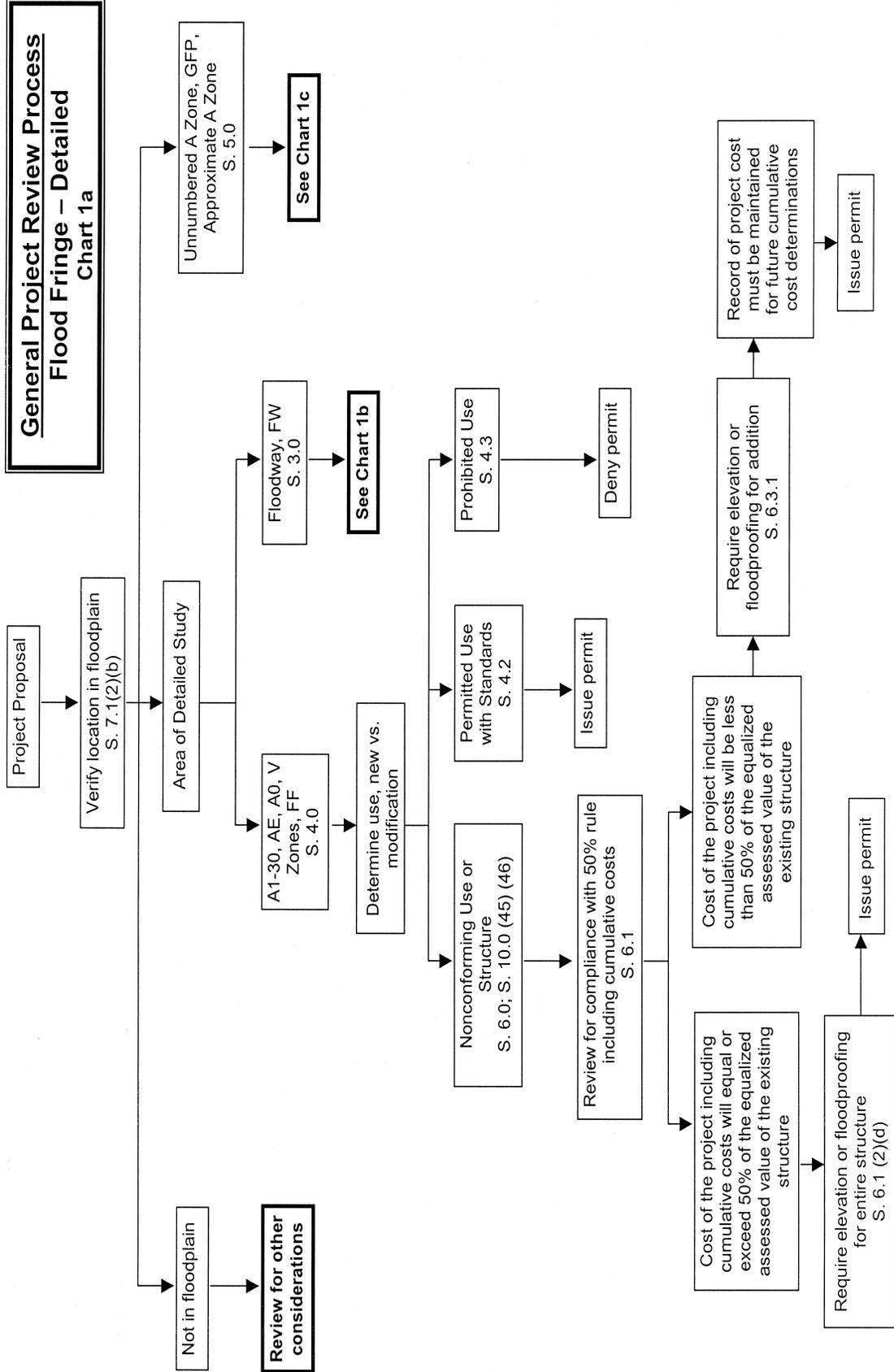
Step 7 If the project is a nonconforming use or structure, review the project cost (including labor and materials based on market rates) in order to determine if the cost is equal to, more than or less than 50% of the current equalized assessed value of the existing structure.

- If the cost of the project is less than 50% of the current equalized assessed value of the structure, notify applicant of the requirement of elevation or floodproofing for the addition then go to **Step 6**.
- If the cost of the project is equal to or more than 50% of the current equalized assessed value of the structure, then deny the permit.
- If the applicant does not agree with the determination of the local official, then an appeal may be filed with the local Board of Adjustment/Appeals.
- If the applicant wishes to remove the property from the determined flood zone, then a Letter of Map Revision Based on Fill (LOMR-F) may be filed. Applicants should be informed that they must meet the requirements of s. NR 116.18, Wis. Admin. Code as well as 44 CFR 65.5. Specifically, no property may be removed from the flood fringe unless technical data regarding the proposed development's effect on flood heights has been submitted and approved, the structure is placed on fill to the flood protection elevation, the area filled extends at least 15 feet beyond the limits of the structure, and the property has dryland access. Contact the DNR Regional office for detailed information.

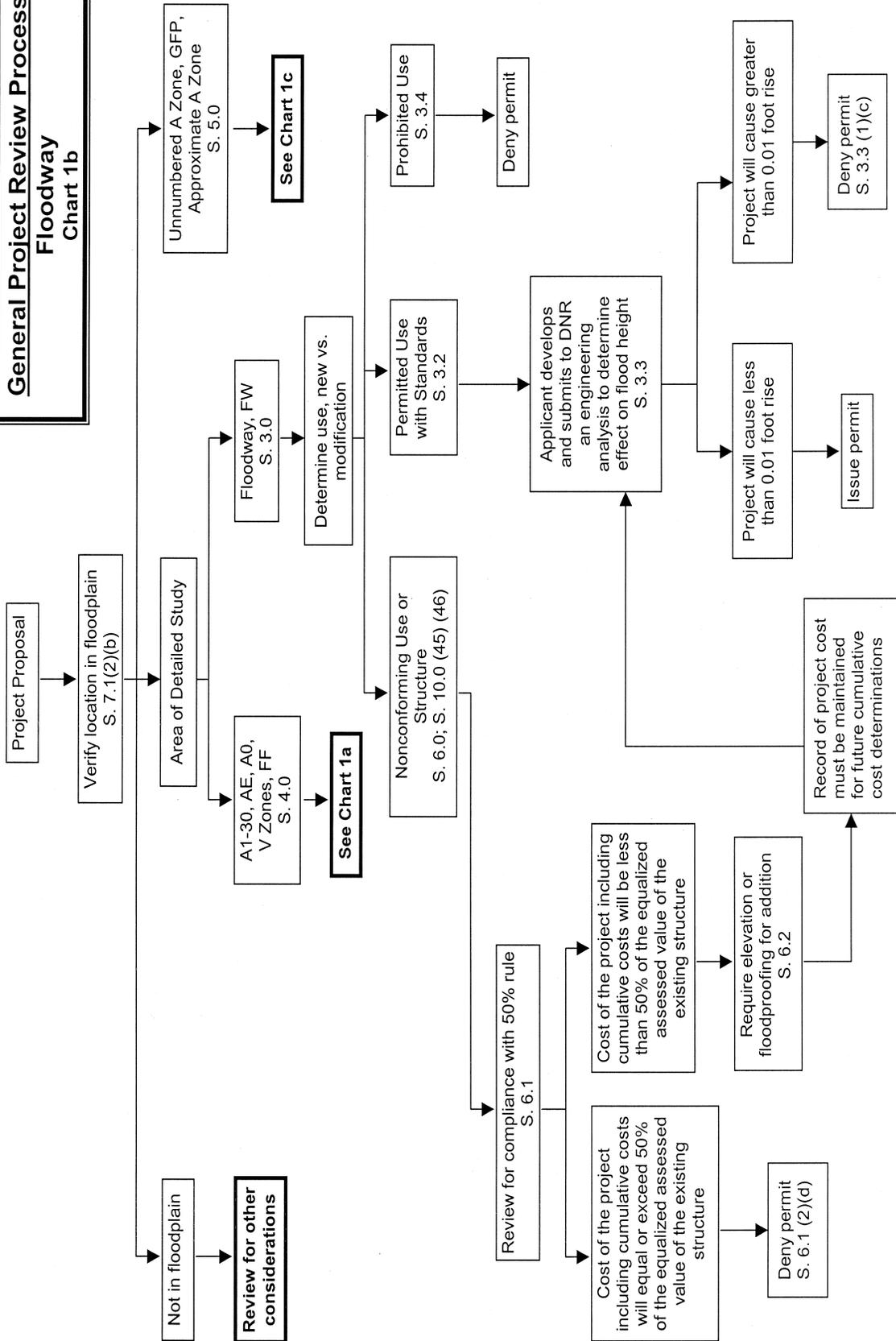
Step 8 For projects in an approximate or unnumbered A zone, the community or the applicant must develop and submit to DNR for review and approval an engineering analysis to determine the RFE. The community may request DNR to develop the analysis for proposals other than subdivisions. The applicant must develop the analysis for a subdivision. A subdivision is defined in ch 236.02 (12), Wis. Admin. Code as the division of a lot, parcel, or tract of land into five (5) or more parcels or building sites of 1.5 acres each or less through successive divisions within a period of five (5) years.

- If DNR does not approve the analysis, then deny the permit.
- If DNR approves the analysis, then go to **Step 2**.

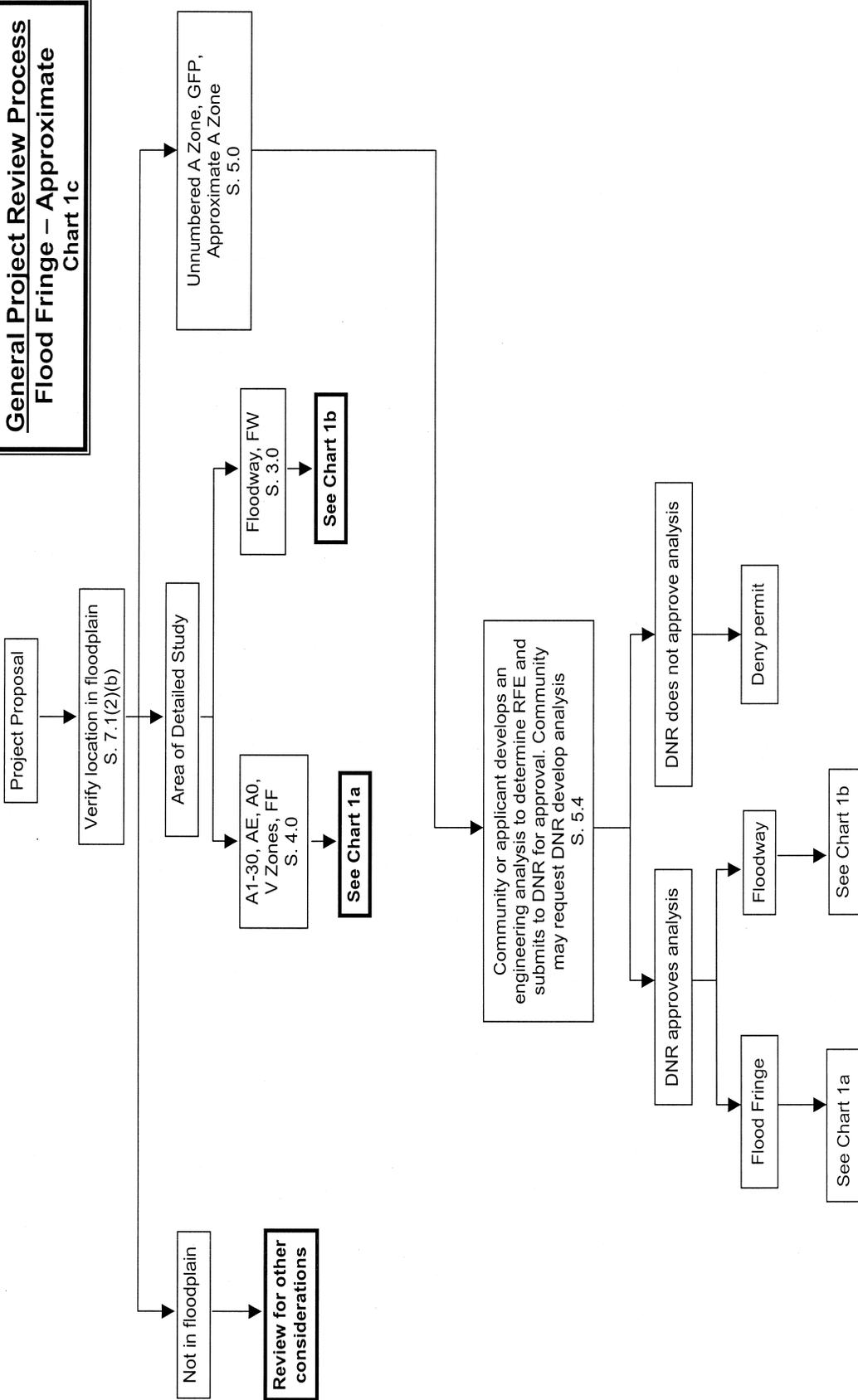
**General Project Review Process
Flood Fringe – Detailed
Chart 1a**



**General Project Review Process
Floodway
Chart 1b**



**General Project Review Process
Flood Fringe – Approximate
Chart 1c**





APPENDIX C

LIST OF CONTACTS

STATE AGENCIES

**Wisconsin Department of Natural Resources
Bureau of Watershed Management
Dam Safety, Floodplain and Shoreland Management**

Central Office

101 South Webster Street
P. O. Box 7921
Madison, WI 53707
608-267-7694
608-267-7664 (fax)
<http://www.dnr.state.wi.us>

Southeastern Regional Headquarters

Serving Kenosha, Milwaukee, Ozaukee, Racine, Sheboygan, Walworth, Washington and Waukesha Counties

Milwaukee Service Center

2300 N. Martin Luther King, Jr. Dr.
Milwaukee, WI 53212
414-263-8500

Southern Regional Headquarters

Serving Columbia, Crawford, Dane, Dodge, Grant, Green, Iowa, Jefferson, Richland, Rock, and Sauk Counties

Madison Service Center

3911 Fish Hatchery Rd
Fitchburg, WI 53711
608-275-3266

West-Central Regional Headquarters

Serving Adams, Buffalo, Chippewa, Clark, Crawford, Dunn, Eau Claire, Jackson, Juneau, LaCrosse, Marathon, Monroe, Pepin, Pierce, Portage, St. Croix, Trempealeau, Vernon and Wood Counties

Eau Claire Service Center

1300 W. Clairemont Ave.
P. O. Box 4001
Eau Claire, WI 54702
715-839-3700

Northeastern Regional Headquarters

Serving Brown, Calumet, Door, Fond du Lac, Green Lake, Kewaunee, Manitowoc, Marinette, Marquette, Menominee, Oconto, Outagamie, Shawano, Waupaca, Waushara, and Winnebago Counties.

Green Bay Service Center

2984 Shawano Ave.
P. O. Box 10448
Green Bay, WI 54307
920-662-5100

Northern Regional Headquarters

Serving Ashland, Barron, Bayfield, Burnett, Douglas, Florence, Forest, Iron, Langlade, Lincoln, Oneida, Polk, Price, Rusk, Sawyer, Taylor, Vilas and Washburn Counties.

Rhineland Service Center

107 Sutcliff Ave.
Rhineland, WI 54501
715-365-8900

Spoooner Service Center

810 W. Maple St.
Spoooner, WI 54801
715-635-2101

Northern Regional Headquarters
Rhineland Service Center
 107 Sutcliff Ave.
 Rhineland, WI 54501
 715-365-8900

Spoooner Service Center
 810 W. Maple St.
 Spooner, WI 54801
 715-635-2101

**The State of Wisconsin
 Department of Natural Resources**



• *Region Offices*

Northeastern Regional Headquarters
Green Bay Service Center
 2984 Shawano Ave.
 P. O. Box 10448
 Green Bay, WI 54307
 920-662-5100

West-Central Regional Headquarters
Eau Claire Service Center
 1300 W. Clairemont Ave.
 P. O. Box 4001
 Eau Claire, WI 54702
 715-839-3700

Southern Regional Headquarters
Madison Service Center
 3911 Fish Hatchery Rd
 Fitchburg, WI 53711
 608-275-3266

Southeastern Regional Headquarters
Milwaukee Service Center
 2300 N. Martin Luther King Dr.
 Milwaukee, WI 53212
 414-263-8500

Division of Emergency Management
Wisconsin Emergency Management
(WEM)

WEM Headquarters

2400 Wright St.
 Madison, WI 53704
 608-242-3232
 1-800-943-0003 (24-Hour Duty Officer)
<http://emergencymanagement.wi.gov>

WEM Southeast Region

Serving Jefferson, Kenosha, Milwaukee, Ozaukee, Racine, Walworth, Washington and Waukesha Counties.

21115 Highway 18
 Waukesha, WI 53186
 262-782-1515

WEM East Central Region

Serving Brown, Calumet, Dodge, Door, Fond du Lac, Green Lake, Kewaunee, Manitowoc, Marquette, Outagamie, Sheboygan, Waupaca, Waushara and Winnebago Counties.

Intersection of Highways 41 and 151
 P. O. Box 984
 Fond du Lac, WI 54936
 920-929-373

WEM Northeast Region

Serving Florence, Forest, Langlade, Lincoln, Marathon, Marinette, Menominee, Oconto, Oneida, Portage, Shawano, Vilas and Wood Counties.

2805 Martin Ave.
 Wausau, WI 54401
 715-845-9517

WEM Northwest Region

Serving Ashland, Barron, Bayfield, Burnett, Douglas, Iron, Polk, Price, Rusk, Sawyer and Washburn Counties.

Highways 53 and 63
 P.O. Box 126
 Spooner, WI 54801
 715-635-8704

WEM Southwest Region

Serving Adams, Columbia, Crawford, Dane, Grant, Green, Iowa, Juneau, Lafayette, Richland, Rock, Sauk and Vernon Counties.

2400 Wright St.
 Madison, WI 53704
 608-242-3336

WEM West Central Region

Serving Buffalo, Chippewa, Clark, Dunn, Eau Claire, Jackson, La Crosse, Monroe, Pepin, Pierce, Taylor, Trempealeau and St. Croix Counties.

5005 Highway 53 South
 Eau Claire, WI 54701
 715-839-3825

Department of Agriculture, Trade and Consumer Protection
(DATCP)

Central Office

2811 Agriculture Drive
 P. O. Box 8911
 Madison, WI 53708
 608-266-2309
<http://www.datcp.state.wi.gov>

Department of Administration
(DOA)

Central Office	101 East Wilson Street 10 th Floor Madison, WI 53708-8944 608-266-2309 http://doa.wi.gov
Wisconsin Coastal Management Program	608-267-7982
Land Information Program	608-267-3369
Municipal Boundary Review	608-266-0683 608-264-6102
Plat Review	608-266-3200

Department of Commerce
(DOC)

Central Office	201 W. Washington Ave. Madison, WI 53707 608-266-1018 http://commerce.wi.gov
Division of Community Development	608-266-7531
Bureau of Community Finance	608-266-2742
Bureau of Enterprise Development	608-267-2045
Brownfields Initiative	608-261-7714
Division of Business Development	608-267-0770
Division of Environmental and Regulatory Services	608-266-3723
Division of Safety and Buildings	608-266-3594

FEDERAL AGENCIES

Federal Emergency Management Agency (FEMA)

FEMA Region V Office	536 S. Clark St., 6th Floor Chicago, IL 60605 312-408-5500 http://www.fema.gov
Community Mitigation Program Branch	312-408-5570
Hazard Identification and Risk Assessment Branch	312-408-5587
Disaster Assistance Registration	800-621-3362 800-462-7585 (TDD)
Helpline	800-525-0321 800-660-8005 (TDD)
Floodplain Maps	800-358-9616
Map Assistance Center	877-336-2627
Publications Center	800-480-2520
Flood Insurance Information Hotline	800-427-4661
Fraud Hotline	800-323-8603

Environmental Protection Agency (EPA)

EPA Region V Office	77 West Jackson Boulevard Chicago, IL 60604 312-353-2000 800-621-8431 (Hotline/General Information) http://www.epa.gov
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Natural Resource Conservation Service (NRCS)

Central Office	8030 Excelsior Drive Madison, WI 53717 608-662-4422 http://nrcs.usda.gov
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**U. S. Army Corps of Engineers
(USACE)**

St. Paul District	190 5 th Street East St. Paul, MN 55101-1638 651-290-5200 <i>http://www.usace.army.mil</i>
Detroit District	477 Michigan Ave. Detroit, MI 48226 313-226-6413 <i>http://www.usace.army.mil</i>
Rock Island District	Clock Tower Building P.O. Box 2004 Rock Island, IL 61204-2004 309-794-4200. <i>http://www.usace.army.mil</i>

State Regulatory Project Managers - Specialists

Chippewa, Clark, Dunn, Eau Claire, Menominee, Pepin and Taylor Counties	651-290-5015
Barron, Polk, Price and Rusk Counties	651-290-5357
Dodge, Fond du Lac, Jefferson, Milwaukee, Ozaukee, Sheboygan, Washington and Waukesha Counties	262-547-4171
Brown, Calumet, Door, Kewaunee, Manitowoc, Marinette, Oconto, Outagamie, Shawano and Winnebago Counties	920-448-2824
Adams, Columbia, Florence, Forest, Green Lake, Juneau, Langlade, Lincoln, Marquette, Marathon, Oneida, Portage, Vilas, Waupaca, Waushara and Wood Counties	715-345-7911
La Crosse, Monroe, Richland, Sauk, Trempealeau, and Vernon Counties	507-895-8059
Dane, Green, Iowa, Kenosha, Lafayette, Racine, Rock and Walworth Counties	262-547-0868
St. Croix County	651-290-5380
Ashland, Bayfield, Burnett, Douglas, Iron, Sawyer and Washburn Counties	218-834-6630

REGIONAL AGENCIES

Regional Planning Commissions

**Bay-Lake Regional Planning
Commission**

Old Fort Square
211 N. Broadway Suite 211
Green Bay, WI 54303-2757
920-448-2820
<http://www.baylakerpc.org>

**Dane County Regional Planning
Commission**

30 West Mifflin Street, Suite 402
Madison, WI 53703
608-266-4137
<http://www.danecorpc.org>

**East Central Wisconsin Regional
Planning Commission**

132 Main Street
Menasha, WI 54952
920-751-4770
<http://www.eastcentralrpc.org>

**Mississippi River Regional
Planning Commission**

1707 Main Street, Suite 240
La Crosse, WI 54601
608-785-9396
<http://www.mrpc.org>

**North Central Wisconsin Regional
Planning Commission**

210 McClellan Street, Suite 210
Wausau, WI 54403
715-849-5510
<http://www.ncwrpc.org>

**Northwest Regional Planning
Commission**

1400 S. River Street
Spooner, WI 54801-1390
715-635-2197
<http://www.nwrpc.org>

**Southeastern Wisconsin Regional
Planning Commission**

916 North East Avenue
P. O. Box 1607
Waukesha, WI 53187-1607
262-547-6721
<http://www.wisrep.org/sewrpc/sewrpc.html>

**Southwestern Wisconsin Regional
Planning Commission**

719 Pioneer Tower
Platteville, WI 53818
608-342-1214
<http://www.swwrpc.org>

**West Central Wisconsin Regional
Planning Commission**

800 Wisconsin St. Suite D2-401
Eau Claire, WI 54703-3606
715-836-2918
<http://wcwrpc.org>

RELATED ORGANIZATIONS

University of Wisconsin

UW Sea Grant Institute

Goodnight Hall 2nd Floor
1975 Willow Dr.
Madison, WI 53706
608-262-0905

UW-Extension Local Government Center

Lowell Center, Room 229
610 Langdon Street
Madison, WI 53703
608-262-9960
<http://www.uwex.edu/lgc>

Information about Center programs is also available at County Extension offices.

UW-Stevens Point Center for Land Use Education

800 Reserve Street
Stevens Point, WI 54481
715-346-4038
<http://www.uwsp.edu/cnr/landcenter>

Wisconsin Geological & Natural History Survey

3817 Mineral Point Road
Madison, WI 53705
608-262-1705
608-263-8086 (Map Sales Office)
<http://www.uwex.edu/wgnhs>

Professional Organizations

Association of State Floodplain Managers

2809 Fish Hatchery Rd.
Madison WI 53713
608-274-0123
<http://www.floods.org>

Wisconsin Association for Floodplain, Stormwater, and Coastal Management

David Fowler
c/o Milwaukee Metropolitan Sewerage District
260 W. Seeboth St.
Milwaukee, WI 53204
414-221-2126
E-mail: dfowler@mmsd.com



APPENDIX D

RESOURCES

American Planning Association

Publications can be ordered from the American Planning Association, Publications Office, 122 S. Michigan Ave. Suite 1600, Chicago, IL 60603. <http://www.planning.org>

The Citizen's Guide to Zoning, by Herbert H. Smith; Planners Press, American Planning Association; 1983.

Subdivision Design in Flood Hazard Areas, American Planning Association and the Federal Emergency Management Agency (PAS Report 473), 1997.

Association of State Floodplain Managers

Publications can be ordered from the Association of State Floodplain Managers, 2809 Fish Hatchery Road Madison, WI 53713.

Addressing Your Community's Flood Problems: A Guide for Elected Officials, a joint effort of the Association of State Floodplain Managers and the Federal Interagency Floodplain Management Task Force, 1996.

Using Multi-Objective Management to Reduce Flood Losses in Your Watershed, prepared by the Association of State Floodplain Managers and the U.S. Environmental Protection Agency; 1996.

Federal Emergency Management Agency

FEMA publications can be ordered by either calling the Publications Center at 800-480-2520 or by visiting the Publications Library at: <http://www.fema.gov/library/prepandprev.shtm#mit>.

Above the Flood, (FEMA 312), 2000.

Above the Flood: Elevating Your Flood-prone House (CD-ROM), (FEMA 347 CD), 2000.

An Integrated Approach to Natural Hazard Mitigation, (FEMA 261), 1995.

Answers to Questions about The National Flood Insurance Program, FEMA.

Answers to Questions About Substantially Damaged Buildings, (Community Assistance Series FEMA 213), 1991.

Appeals, Revisions, and Amendments to National Flood Insurance Program Maps: A Guide for Community Officials, (FIA 12), 1993.

Coastal Construction Manual, (FEMA 55), 2000.

Design Guidelines for Flood Damage Reduction, (FEMA 15), 1981.

Design Manual for Retrofitting Flood-prone Residential Structures, (FEMA 114), 1986.

Elevated Residential Structures, (FEMA 54), 1984.

Engineering Principles and Practices for Retrofitting Flood-prone Residential Buildings, (FEMA 259), 1995.

Flood Mitigation Assistance Brochure, FEMA, (L211), 2000.

Flood Mitigation Assistance Guidance, (FEMA 299), 1997.

Flood-proofing Non-Residential Structures, (FEMA 102), 1986.

Flood-resistant Materials Requirements for Buildings Located in Special Flood Hazard Areas in Accordance with the National Flood Insurance Program, FEMA, (Technical Bulletin 2-93, FIA-TB-2), 1993.

Guidance on Estimating Substantial Damage Using the NFIP Residential Substantial Damage Estimator, FEMA, 1997.

Hazard Mitigation Grant Program Desk Reference, (FEMA 345), 1999.

Hazard Mitigation Grant Program Brochure, FEMA, (L169), 1996.

Historic Preservation CD, (FEMA 327), 1999.

How to Use a Flood Map to Determine Flood Risk for a Property: A Guide for Interested Private Citizens, Property Owners, Community Officials, Lending Institutions, and Insurance Agents, (FEMA 258), 1995.

Managing Coastal Erosion, National Research Council, 1990.

Mandatory Purchase of Flood Insurance Guidelines, (FEMA 186), 1997.

Mitigation of Flood and Erosion Damage to Residential Buildings in Coastal Areas, (FEMA 257), 1994.

National Mitigation Strategy Brochure, FEMA, (L169), 1997.

NFIP Interim Guidelines for State and Local Officials: Increased Cost of Compliance Coverage, (FEMA 301), 1997.

Non-Residential Flood-proofing Requirements and Certification for Buildings Located in Special Flood Hazard Areas in Accordance with the National Flood Insurance Program, FEMA, (Technical Bulletin 3-93, FIA-TB-3), 1993.

Post-Hazard Mitigation Planning Guide for State and Local Officials, FEMA, (DAP 12), 1990.

Property Acquisition Handbook in Local Communities, (FEMA 317), 1998.

Protecting Building Utilities from Flood Damage, (FEMA 348), 2000.

Protecting Floodplain Resources: A Guidebook for Communities, Federal Interagency Floodplain Management Task Force (FEMA 268), 1996.

Reducing Losses in High-Risk Flood Hazard Areas: A Guidebook for Local Officials, ASFPM, (FEMA 116), 1987.

Wisconsin Department of Natural Resources

Publications can be ordered from local DNR service centers. See Appendix C: List of Contacts.

Creating an Effective Shoreland Zoning Ordinance: A Summary of Wisconsin Shoreland Zoning Ordinances, prepared by the Wisconsin Department of Natural Resources Bureau of Watershed Management (DNR Publication No. WT-542-00), 2000.

The Regulation of Land Use, prepared by Michael J. Keane; Informational Bulletin 98-3, State of Wisconsin Legislative Reference Bureau; September 1998.

Shoreland Management Program Assessment, prepared by Thomas W. Bernthal and Susan A. Jones, (DNR Publication No. WT-508-97), 1997.

Zoning Case Law in Wisconsin: Cases Relevant to Shoreland and Floodplain Zoning in Wisconsin (Published Decisions of the Wisconsin Supreme Court and Court of Appeals), prepared by the Wisconsin Department of Natural Resources Bureau of Legal Services (WT-540-00), revised October 2004.

University of Wisconsin-Stevens Point, Center for Land Use Education

Publications can be ordered from the UW Stevens Point, Center for Land Use Education, 800 Reserve Street, Stevens Point, WI 54481 715-346-4038
<http://www.uwsp.edu/cnr/landcenter/pubs.html>

Zoning Board Handbook, For Zoning Boards of Adjustment/Appeals, by Michael D. Dresen and Lynn M. Markham, Center for Land Use Education, University of Wisconsin-Stevens Point College of Natural Resources and Cooperative Extension, May 21, 2001.

U. S. Army Corps of Engineers

Publications can be ordered from the USACE District Offices. See Appendix C: List of Contacts.

Flood Proofing – How to Evaluate Your Options, USACE, 1993.

Flood Proofing Programs, Techniques, and References, USACE, 1996.

Flood Proofing Regulations, USACE, (EP-1165-2-314), 1992.

Local Flood Proofing Programs, USACE, 1994.

Other Publications

Guide to Community Planning in Wisconsin, by Brian W. Ohm, Department of Urban & Regional Planning, University of Wisconsin-Madison/Extension, 1999.



APPENDIX E

ANNOTATED MODEL FLOODPLAIN ZONING ORDINANCE

NOTE: This model ordinance does not contain language covering Flood Storage Districts. Model ordinance language for Flood Storage Districts is available on the DNR website: <http://www.dnr.state.wi.us/org/water/wm/dsfm/flood/communities.htm>.

MODEL ORDINANCE PROVISIONS	BACKGROUND / NOTES	CODE/ LAW
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1.0 STATUTORY AUTHORIZATION, FINDING OF FACT, STATEMENT OF PURPOSE, TITLE AND GENERAL PROVISIONS

1.1 STATUTORY AUTHORIZATION

NR 116.01

This ordinance is adopted pursuant to the authorization in ss. 61.35 and 62.23, for villages and cities; 59.69, 59.692, and 59.694 for counties; and the requirements in s. 87.30, Stats.

NOTE: These are the statutory authorities for a municipality to adopt the ordinance. The term "municipality" as used in this ordinance means the city, village or county governmental unit adopting and administering this ordinance. This ordinance is designed to meet the requirements of s. 87.30, Stats.

1.2 FINDING OF FACT

NR 116.01

Uncontrolled development and use of the floodplains and rivers of this municipality would impair the public health, safety, convenience, general welfare and tax base.

1.3 STATEMENT OF PURPOSE

NR 116.01

This ordinance is intended to regulate floodplain development to:

NOTE: The purpose of this ordinance is to protect life, health and property and reduce flood losses. These regulations do not prohibit development but are intended to protect it from the effects of flooding.

- (1) Protect life, health and property;
- (2) Minimize expenditures of public funds for flood control projects;
- (3) Minimize rescue and relief efforts undertaken at the expense of the taxpayers;
- (4) Minimize business interruptions and other economic disruptions;
- (5) Minimize damage to public facilities in the floodplain;
- (6) Minimize the occurrence of future flood blight areas in the floodplain;

(7) Discourage the victimization of unwary land and homebuyers;

(8) Prevent increases in flood heights that could increase flood damage and result in conflicts between property owners; and

(9) Discourage development in a floodplain if there is any practicable alternative to locate the activity, use or structure outside of the floodplain.

NOTE: Introduces the concept of "practicable alternatives" to encourage property owners to consider alternative development sites outside of the floodplain.

1.4 TITLE

This ordinance shall be known as the Floodplain Zoning Ordinance for _____, Wisconsin.

1.5 GENERAL PROVISIONS

(1) AREAS TO BE REGULATED

NR 116.06

~~Areas regulated by this ordinance include all areas within the limits of the municipality that would be covered by the "regional flood" (defined in s. 10.1) and include "floodplain islands" (defined in s. 10.1) designated on the official map where emergency rescue and relief routes would be inundated by the regional flood.~~

NOTE: All Wisconsin communities with a Special Flood Hazard Area (SFHA) which is derived from a federal Flood Insurance Study (FIS) must use the Base Flood Elevation (BFE) for floodplain ordinance administration. For floodplains that are identified by other studies, the Regional Flood Elevation (RFE) can be used. Annexed property remains under county regulations until the community adopts appropriate regulations for the annexed area.

This ordinance regulates all areas that would be covered by the regional flood or base flood.

NOTE: The term "base flood" has been added.

Note: Base flood elevations (BFE) are derived from the flood profiles in the Flood Insurance Study (FIS). Regional flood elevations (RFE) may be derived from other studies. Areas covered by the base flood are identified as A-Zones on the Flood Insurance Rate Map (FIRM).

(2) OFFICIAL MAPS & REVISIONS

NR 116.06
NR 116.09
44 CFR 60.3(b)

The boundaries of all floodplain districts are designated as floodplains or A-Zones on the maps listed below and the revisions in the (municipality name) Floodplain Appendix. Any change to the base flood elevations in the Flood Insurance Study or on the Flood Insurance Rate Map must be

NOTE: This ordinance adopts floodplain regulations for all areas at or below BFE which are generally identified on the "official map" in s. 1.5(2) below. For all communities participating in the National Flood Insurance Program, the "official map" must include all

reviewed and approved by the DNR and FEMA before it is effective. No changes to regional flood elevations on non-FEMA maps shall be effective until approved by the DNR. These maps and revisions are on file in the office of the (municipal office), (municipality name). If more than one map or revision is referenced, the most current approved information shall apply.

OFFICIAL MAPS: Based on the FIS (modify and delete below examples as appropriate)

(a) Flood Insurance Rate Map (FIRM), panel number 550470 0001 C, dated January 1, 1982; and Flood Boundary and Floodway Map (FBFW), panel number 550470 0001 B, dated April 2, 1979, with corresponding profiles that are based on the Flood Insurance Study (FIS) dated October 1978.

Approved by: The DNR and FEMA

OFFICIAL MAPS: Based on other studies

(b) 100-Year Dam Failure Floodplain Map, dated March 4, 1993, prepared by ABC Engineering.

Approved by: The DNR and FEMA

(c) Silver Creek Floodplain Map, dated August 10, 1993, prepared by ABC Engineering.

Approved by: The DNR and FEMA

(d) Floodplain Study Appendix: All DNR- and FEMA-approved floodplain maps, flood profiles, floodway data tables, regional or base flood elevations and other information located in the Appendix of this ordinance. The community shall provide the most up to date Appendix to the DNR and FEMA regional offices.

(3) ESTABLISHMENT OF DISTRICTS

The regional floodplain areas are divided into three

approved panels from the community's FIS. These maps cannot be changed without proper review and approval by both the DNR and FEMA. As newer maps are developed or other regulations apply, additional areas - such as dams, storage areas, coastal areas – must be regulated.

44 CFR Part 65

NOTE: This section must include the most current floodplain data which has been reviewed and approved by the DNR and FEMA. Where there has been an FIS or other detailed floodplain study conducted, the elevations in the flood profiles must be used for all permit decisions.

Where more than one map (or other data) exists, the most current approved data should be used for zoning decisions. While a community can grant or deny permits based on approved data not yet adopted, it is advisable to adopt first.

Note: These are examples of other maps a community may adopt.

Note: It is advisable to use an appendix in communities which receive regular updated engineering information, such as bridge replacements and other public works projects in floodplain areas.

NR 116.11

districts as follows:

(a) The Floodway District (FW) is the channel of a river or stream and those portions of the floodplain adjoining the channel required to carry the regional floodwaters.

(b) The Floodfringe District (FF) is that portion of the floodplain between the regional flood limits and the floodway.

(c) The General Floodplain District (GFP) is those areas that have been or may be covered by floodwater during the regional flood.

Note: A companion model flood storage ordinance contains these three districts plus the Flood Storage District.

(4) LOCATING FLOODPLAIN BOUNDARIES

NR 116.10

Discrepancies between boundaries on the official floodplain zoning map and actual field conditions shall be resolved using the criteria in paragraphs (a) or (b) below. If a significant difference exists, the map shall be amended according to s. 8.0. The zoning administrator can rely on a boundary derived from a profile elevation to grant or deny a land use permit, whether or not a map amendment is required. The zoning administrator shall be responsible for documenting actual pre-development field conditions and the basis upon which the district boundary was determined and for initiating any map amendments required under this section. Disputes between the zoning administrator and an applicant over the district boundary line shall be settled according to s. 7.3(3) and the criteria in (a) and (b) below.

Note: While it is the local zoning officials' responsibility to correctly interpret the available maps, Department Regional staff can provide technical assistance if needed.

(a) If flood profiles exist, the map scale and the profile elevations shall determine the district boundary. The regional or base flood elevations shall govern if there are any discrepancies.

(b) Where flood profiles do not exist, the location of the boundary shall be determined by the map scale, visual on-site inspection and any information provided by the Department.

Note: Where the flood profiles are based on established base flood elevations from a FIRM, FEMA must also approve any map amendment pursuant to s. 8.1 (6).

NOTE: Any proposed map amendment that revises a flood elevation or floodplain boundary which is derived from the FIS must be reviewed and approved by FEMA before it can become effective.

(5) REMOVAL OF LANDS FROM FLOODPLAIN

NR 116.18

Compliance with the provisions of this ordinance shall not be grounds for removing land from the floodplain unless it is filled at least two feet above the regional or base flood elevation, the fill is contiguous to land outside the floodplain, and the map is amended pursuant to s. 8.0. ~~To remove flood insurance requirements, FEMA must revise the Flood Insurance Rate Map or issue a Letter of Map Amendment or Revision.~~

NOTE: If FEMA has revised the map or exempted the structure from flood insurance requirements, zoning regulations still apply until the municipality formally amends the map. The property owner should always be advised of the requirements of the NFIP.

Note: This procedure does not remove the requirements for the mandatory purchase of flood insurance. The property owner must contact FEMA to request a Letter of Map Change (LOMC).

NOTE: This note explains the NFIP provisions for removing the flood insurance requirements for a property in the floodplain.

(6) COMPLIANCE

NR 116.20

Any development or use within the areas regulated by this ordinance shall be in compliance with the terms of this ordinance and other applicable local, state, and federal regulations.

(7) MUNICIPALITIES AND STATE AGENCIES REGULATED

NR 116.02

Unless specifically exempted by law, all cities, villages, towns, and counties are required to comply with this ordinance and obtain all necessary permits. State agencies are required to comply if s. 13.48(13), Stats., applies. The construction, reconstruction, maintenance and repair of state highways and bridges by the Wisconsin Department of Transportation is exempt when s. 30.2022, Stats., applies.

Note: While state agencies are not always required to comply with local zoning ordinances, it is state policy for all agencies to comply to the maximum extent feasible.

(8) ABROGATION AND GREATER RESTRICTIONS

s. 59.692(2)(b)Stat.

(a) This ordinance supersedes all the provisions of any municipal zoning ordinance enacted under ss. 59.69, 59.692 or 59.694 for counties; s. 62.23 for cities; or s. 61.35 for villages; or s. 87.30, Stats., which relate to floodplains. If another ordinance is more restrictive than this ordinance, that ordinance shall continue in full force and effect to the extent of the greater restrictions, but not otherwise.

(b) This ordinance is not intended to repeal,

abrogate or impair any existing deed restrictions, covenants or easements. If this ordinance imposes greater restrictions, the provisions of this ordinance shall prevail.

(9) INTERPRETATION

In their interpretation and application, the provisions of this ordinance are the minimum requirements liberally construed in favor of the governing body and are not a limitation on or repeal of any other powers granted by the Wisconsin Statutes. If a provision of this ordinance, required by ch. NR 116, Wis. Adm. Code, is unclear, the provision shall be interpreted in light of the standards in effect on the date of the adoption of this ordinance or in effect on the date of the most recent text amendment to this ordinance.

(10) WARNING AND DISCLAIMER OF LIABILITY

The flood protection standards in this ordinance are based on engineering experience and scientific research. Larger floods may occur or the flood height may be increased by man-made or natural causes. This ordinance does not imply or guarantee that non-floodplain areas or permitted floodplain uses will be free from flooding and flood damages. Nor does this ordinance create liability on the part of, or a cause of action against, the municipality or any officer or employee thereof for any flood damage that may result from reliance on this ordinance.

(11) SEVERABILITY

Should any portion of this ordinance be declared unconstitutional or invalid by a court of competent jurisdiction, the remainder of this ordinance shall not be affected.

(12) ANNEXED AREAS FOR CITIES AND VILLAGES

s. 59.692(7)Stats.

The _____ County floodplain zoning provisions in effect on the date of annexation shall remain in effect and shall be enforced by the municipality for all annexed areas until the municipality adopts and enforces an ordinance which meets the requirements of ch. NR 116, Wis. Adm. Code and the National

NOTE: Any annexed land shall be governed by the provisions of the county floodplain ordinance until the municipality adopts a floodplain zoning ordinance that meets both DNR and FEMA minimum standards.

Flood Insurance Program (NFIP). These annexed lands are described on the municipality's official zoning map. County floodplain zoning provisions are incorporated by reference for the purpose of administering this section and are on file in the office of the municipal zoning administrator. All plats or maps of annexation shall show the regional flood elevation and the location of the floodway.

(13) GENERAL DEVELOPMENT STANDARDS

44 CFR 60.3 a) 3

The community shall review all permit applications to determine whether proposed building sites will be reasonably safe from flooding. If a proposed building site is in a flood-prone area, all new construction and substantial improvements shall be designed or modified and adequately anchored to prevent flotation, collapse, or lateral movement of the structure resulting from hydrodynamic and hydrostatic loads; be constructed with materials resistant to flood damage; be constructed by methods and practices that minimize flood damages; and be constructed with electrical, heating, ventilation, plumbing, and air conditioning equipment and other service facilities designed and/or located so as to prevent water from entering or accumulating within the components during conditions of flooding. Subdivisions shall be reviewed for compliance with the above standards. All subdivision proposals (including manufactured home parks) shall include regional flood elevation and floodway data for any development which meets the subdivision definition of this ordinance.

NOTE: This sub-section represents the minimum NFIP development requirements for building in a floodplain.

2.0 GENERAL STANDARDS APPLICABLE TO ALL FLOODPLAIN DISTRICTS

2.1 HYDRAULIC AND HYDROLOGIC ANALYSES

NOTE: The zoning administrator must determine if the development will obstruct flow, causing an increase in flood height, according to s. 3.3(1) for floodway uses, and for any floodfringe developments large enough to warrant analysis. The zoning administrator must deny permits for any development which will cause an increase in flood height of 0.01 foot or greater.

NR 116.12
NR 116.13
NR 116.14

Permitted uses in the floodway which cause an increase of 0.01 foot or greater in flood height require amendments to the profile and map to show this increase. Uses not permitted

can only be allowed if the site is properly filled and contiguous to lands outside the floodplain, the map is amended and the site is rezoned..

Section 3.3 lists the standards for development in floodway areas. Development is defined in s. 10.1 as “any manmade change to improved or unimproved real estate, including but not limited to the construction or repair of buildings, structures or accessory structures...” It also includes such nonstructural activities as mining, dredging, filling, grading, paving, excavation or drilling operations or the deposition or extraction of materials. Structures designed for human habitation are expressly prohibited because of the high danger to human life due to higher velocities and increased depths of moving water within this district. Public utilities, streets and bridges must be floodproofed and should be designed so as not to cause an increase in flood heights. If increases are caused, then the provisions of s. 8.2 must be applied. Fill placed within the floodway must be protected against erosion and must not be placed in the channel unless all necessary state and federal permits have been obtained from both the Department and the U.S. Army Corps of Engineers.

(1) Except as allowed in sub. (3) below, no floodplain development shall:

(a) Obstruct flow, defined as development which blocks the conveyance of floodwaters by itself or with other development, increasing regional flood height; or

(b) Increase regional flood height due to floodplain storage area lost, which equals or exceeds 0.01 foot.

(2) The zoning administrator shall deny permits if it is determined the proposed development will obstruct flow or increase regional flood heights 0.01 foot or more, based on the officially adopted FIRM or other adopted map, unless the provisions of sub. (3) are met.

(3) Obstructions or increases equal to or greater than 0.01 foot may only be permitted if amendments are made to this ordinance, the official floodplain zoning maps, floodway lines and water surface

FEMA does not provide waivers for increasing flood heights more than 1.0 feet, so this provision was removed from the model. A note was added to remind communities that

profiles, in accordance with s. 8.0. ~~and only if the cumulative effect of the proposed development will not increase the regional flood height more than 1.0 foot for the hydraulic reach of the stream unless a waiver is secured from FEMA for the 1.0 foot maximum increase~~

both the DNR and FEMA must approve any changes in flood profiles.

Note: This section refers to obstructions or increases in base flood elevations as shown on the officially adopted FIRM or other adopted map. Any such alterations must be reviewed and approved by FEMA and the DNR.

2.2 WATERCOURSE ALTERATIONS

44 CFR 60.3(b)
Ch. 30 Stats.

No land use permit to alter or relocate a watercourse in a mapped floodplain shall be issued until the local official has notified in writing all adjacent municipalities, the Department and FEMA regional offices and required the applicant to secure all necessary state and federal permits. The flood carrying capacity of any altered or relocated watercourse shall be maintained.

NOTE: All watercourse alterations in a FEMA-mapped floodplain must be submitted to FEMA for possible revisions to the FIRM and other documents.

As soon as is practicable, but not later than six months after the date of the watercourse alteration or relocation, the zoning administrator shall notify FEMA of the changes by submitting appropriate technical or scientific data in accordance with NFIP guidelines that shall be used to revise the FIRM, risk premium rates and floodplain management regulations as required.

2.3 CHAPTER 30, 31, WIS. STATS., DEVELOPMENT

Development which requires a permit from the Department, under chs. 30 and 31, Wis. Stats., such as docks, piers, wharves, bridges, culverts, dams and navigational aids, may only be allowed if the necessary permits are obtained and amendments to the floodway lines, water surface profiles, BFE's established in the FIS, or other data from the officially adopted FIRM or other floodplain zoning maps or the floodplain zoning ordinance are made according to s. 8.0.

NOTE: A reminder to communities that any revisions to the FIS are only permitted if the proper amendments are made.

2.4 PUBLIC OR PRIVATE CAMPGROUNDS

44 CFR 60.3 c)14

Public or private campgrounds shall have a low flood damage potential and shall meet the following

NOTE: These campground standards were developed in consultation with FEMA staff

NR 116.12(2)(b)

provisions:

and represent the minimum requirements of chapter NR 116 and the FEMA regulations.

- (1) The campground is approved by the Department of Health and Family Services.
- (2) A land use permit for the campground is issued by the zoning administrator.
- (3) The character of the river system and the elevation of the campground is such that a 72-hour warning of an impending flood can be given to all campground occupants.
- (4) There is an adequate flood warning procedure for the campground that offers the minimum notice required under this section to all persons in the campground. This procedure shall include a written agreement between the campground owner, the municipal emergency government coordinator and the chief law enforcement official which specifies the flood elevation at which evacuation shall occur, personnel responsible for monitoring flood elevations, types of warning systems to be used and the procedures for notifying at-risk parties, and the methods and personnel responsible for conducting the evacuation.
- (5) This agreement shall be for no more than one calendar year, at which time the agreement shall be reviewed and updated - by the officials identified in sub. (4) - to remain in compliance with all applicable regulations, including those of the state department of health and family services and all other applicable regulations.
- (6) Only camping units are allowed.
- (7) The camping units may not occupy any site in the campground for more than 180 consecutive days, at which time the camping unit must be removed from the floodplain for a minimum of 24 hours.
- (8) All camping units that remain on site for more than 30 days shall be issued a limited authorization by the campground operator, a written copy of which is kept on file at the campground. Such authorization shall allow placement of a camping unit for a period not to exceed 180 days and shall ensure compliance with all the provisions of this section.
- (9) The municipality shall monitor the limited authorizations issued by the campground operator to assure compliance with the terms of this section.
- (10) All camping units that remain in place for more than 180 consecutive days must meet the applicable requirements in either s. 3.0 or s. 4.0 for

the floodplain district in which the structure is located.

(11) The campground shall have signs clearly posted at all entrances warning of the flood hazard and the procedures for evacuation when a flood warning is issued.

(12) All service facilities, including but not limited to refuse collection, electrical service, natural gas lines, propane tanks, sewage systems and wells shall be properly anchored and placed at or floodproofed to the flood protection elevation.

3.0 FLOODWAY DISTRICT (FW)

3.1 APPLICABILITY

This section applies to all floodway areas on the floodplain zoning maps and those identified pursuant to s. 5.4.

3.2 PERMITTED USES

NR 116.12(2)

The following open space uses are allowed in the floodway district and the floodway areas of the general floodplain district, if

- they are not prohibited by any other ordinance;
- they meet the standards in s. 3.3 and 3.4; and
- all permits or certificates have been issued according to s. 7.1:

(1) Agricultural uses, such as: farming, outdoor plant nurseries, horticulture, viticulture and wild crop harvesting.

(2) Nonstructural industrial and commercial uses, such as loading areas, parking areas and airport landing strips.

(3) Nonstructural recreational uses, such as golf courses, tennis courts, archery ranges, picnic grounds, boat ramps, swimming areas, parks, wildlife and nature preserves, game farms, fish hatcheries, shooting, trap and skeet activities, hunting and fishing areas and hiking and horseback riding trails, subject to the fill limitations of s. 3.3(4).

(4) Uses or structures accessory to open space uses, or classified as historic structures that comply with ss. 3.3 and 3.4.

Note: Structures which may be permitted must either be accessory to a open space use – playground equipment, tennis courts, lighting,

signs, etc. – or be functionally dependent on a waterfront location – boat ramps, material loading facilities, etc.

(5) Extraction of sand, gravel or other materials that comply with s. 3.3(4).

(6) Functionally water-dependent uses, such as docks, piers or wharves, dams, flowage areas, culverts, navigational aids and river crossings of transmission lines, and pipelines that comply with chs. 30, 31, Stats.

(7) Public utilities, streets and bridges that comply with s. 3.3(3).

3.3 STANDARDS FOR DEVELOPMENTS IN FLOODWAY AREAS

NR 116.12

(1) GENERAL

(a) Any development in floodway areas shall comply with s. 2.0 and have a low flood damage potential.

NR 116.12 (2)

(b) Applicants shall provide the following data to determine the effects of the proposal according to s. 2.1:

1. A cross-section elevation view of the proposal, perpendicular to the watercourse, showing if the proposed development will obstruct flow; or

NR 116.07

2. An analysis calculating the effects of this proposal on regional flood height.

(c) The zoning administrator shall deny the permit application if the project will increase flood elevations upstream or downstream 0.01 foot or more, based on the data submitted for par. (b) above.

NR 116.12(1)(a)

(2) **STRUCTURES**: Structures accessory to permanent open space uses, classified as historic structures, or functionally dependent on a waterfront location may be allowed by permit if the structures comply with the following criteria:

NR 116.12(2)(a)

(a) The structures are not designed for human habitation and do not have a high flood damage potential;

(b) The structures are constructed and placed on the building site so as to increase flood heights less than 0.01 foot and minimally obstruct the flow of floodwaters. Structures shall be constructed with the long axis parallel to the flow of floodwaters and on the same line as adjoining structures;

(c) The structures are properly anchored to prevent them from floating away and restricting bridge openings or other restricted sections of the stream or river; and

(d) The structures have all service facilities at or above the flood protection elevation.

(3) Public utilities, streets and bridges may be allowed by permit, if:

NR 116.12(2)(d)

(a) Adequate floodproofing measures are provided to the flood protection elevation; and

~~Construction does not increase the regional flood height according to s. 2.1, except where the water surface profiles, floodplain zoning maps and floodplain zoning ordinance are amended to reflect such changes.~~

(b) Construction meets the development standards of s. 2.1.

NOTE: This section was rewritten to clarify that the standards in s. 2.1 must be met.

(4) Fill or deposition of materials may be allowed by permit, if:

(a) The requirements of s. 2.1 are met;

(b) No material is deposited in the navigable channel unless a permit is issued by the Department pursuant to ch. 30, Stats., and a permit pursuant to s. 404 of the Federal Water Pollution Control Act, Amendments of 1972, 33 U.S.C. 1344 has been issued, if applicable, and the other requirements of this section are met;

(c) The fill or other materials will be protected against erosion by riprap, vegetative cover, sheet piling or bulkheading; and

(d) The fill is not classified as a solid or hazardous waste material.

NR 116.12(1) (g)

3.4 PROHIBITED USES

All uses not listed as permitted uses in s. 3.2 are prohibited, including the following uses:

NR 116.12(1)

- (1) Habitable structures, structures with high flood damage potential, or those not associated with permanent open-space uses;
- (2) Storing materials that are buoyant, flammable, explosive, injurious to property, water quality, or human, animal, plant, fish or other aquatic life;
- (3) Uses not in harmony with or detrimental to uses permitted in the adjoining districts;
- (4) Any private or public sewage systems, except portable latrines that are removed prior to flooding and systems associated with recreational areas and Department-approved campgrounds that meet the applicable provisions of local ordinances and ch. COMM 83, Wis. Adm. Code.
- (5) Any public or private wells which are used to obtain potable water, except those for recreational areas that meet the requirements of local ordinances and chs. NR 811 and NR 812, Wis. Adm. Code;
- (6) Any solid or hazardous waste disposal sites;
- (7) Any wastewater treatment ponds or facilities, except those permitted under s. NR 110.15(3)(b), Wis. Adm. Code;
- (8) Any sanitary sewer or water supply lines, except those to service existing or proposed development located outside the floodway which complies with the regulations for the floodplain area occupied.

Note: Department guidance is available on the placement of portable latrines in floodway areas.

4.0 FLOODFRINGE DISTRICT (FF)

4.1 APPLICABILITY

This section applies to all floodfringe areas shown on the floodplain zoning maps and those identified pursuant to s. 5.4.

4.2 PERMITTED USES

NR 116.13(1)

Any structure, land use, or development is allowed in the floodfringe district if the standards in s. 4.3

are met, the use is not prohibited by this or any other ordinance or regulation and all permits or certificates specified in s. 7.1 have been issued.

4.3 STANDARDS FOR DEVELOPMENT IN FLOODFRINGE AREAS

(1) All of the provisions of s. 2.1 shall apply. In addition, the following requirements shall apply according to the use requested.

NR 116.13

(2) **RESIDENTIAL USES:** Any habitable structure, including a manufactured home, which is to be erected, constructed, reconstructed, altered, or moved into the floodfringe area, shall meet or exceed the following standards;

NR 116.13(2)

(a) The elevation of the lowest floor, excluding the basement or crawlway, shall be at or above the flood protection elevation on fill. The fill shall be one foot or more above the regional flood elevation extending at least 15 feet beyond the limits of the structure. The Department may authorize other floodproofing measures if the elevations of existing streets or sewer lines makes compliance impractical and the Board of Adjustment/Appeals grants a variance;

Note: If the placement of fill is impractical, the municipality should contact the Department Regional floodplain staff to discuss alternative floodproofing measures which could be implemented.

(b) The basement or crawlway floor may be placed at the regional flood elevation if it is floodproofed to the flood protection elevation. No basement or crawlway floor is allowed below the regional flood elevation;

NOTE: Par. (b) allows floodproofed basements below the flood protection elevation, but not lower than the RFE. If no profiles have been published, a case-by-case analysis must be conducted to determine the RFE before the development can be permitted. Section 7.3(4) requires that the applicant be informed that, due to NFIP requirements, flood insurance premiums will increase if a structure is built below the RFE, since insurance rates are based on the lowest floor elevation compared to the RFE. The least expensive flood insurance rates are for structures that have their lowest floor constructed two feet or more above the RFE.

(c) Contiguous dryland access shall be provided from a structure to land outside of the floodplain, except as provided in par. (d).

NOTE: Par. (c) requires dryland access to the structure during the regional flood for wheeled rescue and relief vehicles.

(d) In developments where existing street or sewer line elevations make compliance with par. (c) impractical, the municipality may permit new

NOTE: Par. (d) permits development, even if dryland access can't be provided, if emergency services can be provided during the regional flood, or if the community has a

development and substantial improvements where access roads are at or below the regional flood elevation, if:

1. The municipality has written assurance from police, fire and emergency services that rescue and relief will be provided to the structure(s) by wheeled vehicles during a regional flood event; or
2. The municipality has a natural disaster plan approved by Wisconsin Emergency Management and the Department.

department-approved natural disaster plan for flooding. If neither option can be met, no residential or commercial development can be allowed.

(3) ACCESSORY STRUCTURES OR USES: An accessory structure or use not connected to a principal structure shall be constructed with its lowest floor no more than two feet below the regional flood elevation, subject to flood velocities of no more than two feet per second, and shall meet all the provisions of ss. 3.3 (2) (a), (b), (c), (d), and sub. (6) below.

NOTE: This section has been revised for clarity. It applies to an accessory structure or use that is not connected to the principle structure or use. The accessory structure must be incidental to the principle use of the property, structure or building. Only those structures which are not associated with a high degree of flood damage potential are allowed. An addition is not an accessory structure. All additions to residential and commercial structures must be elevated on fill or floodproofed to the flood protection elevation, according to s. 4.3(2).

NR 116.13(3)

(4) COMMERCIAL USES: Any commercial structure which is erected, altered or moved into the floodfringe area shall meet the requirements of s. 4.3(2). Subject to the requirements of sub. (6), storage yards, surface parking lots and other such uses may be placed at lower elevations ~~subject to the requirements of sub. (3) and (6), unless if an adequate warning system exists to protect life and property.~~

NOTE: This section has been rewritten for clarity and to emphasize that only surface parking lots are eligible for the lesser flood protection standards.

NR 116.13(4)

(5) MANUFACTURING AND INDUSTRIAL USES: Any manufacturing or industrial structure which is erected, altered or moved into the floodfringe area shall be protected to the flood protection elevation using fill, levees, floodwalls, or other flood proofing measures in s. 7.5. Subject to the requirements of sub. (6), storage yards, surface parking lots and other such uses may be at lower elevations if an adequate warning system exists to protect life and property. ~~Less protection, compatible with the criteria in sub. (3) and (6), may be allowed for storage yards, surface parking lots~~

NOTE: This section has been rewritten for clarity and to emphasize that only surface parking lots are eligible for the lesser flood protection standards.

NR 116.13(5)

and other accessory structures or uses.

(6) STORAGE OF MATERIALS: Materials that are buoyant, flammable, explosive, or injurious to property, water quality or human, animal, plant, fish or aquatic life shall be stored at or above the flood protection elevation or floodproofed in compliance with s. 7.5. Adequate measures shall be taken to ensure that such materials will not enter the water body during flooding. NR 116.13(6)

(7) PUBLIC UTILITIES, STREETS AND BRIDGES: All utilities, streets and bridges shall be designed to be compatible with comprehensive floodplain development plans; and NR 116.13(7)

(a) When failure of public utilities, streets and bridges would endanger public health or safety, or where such facilities are deemed essential, construction of and substantial improvements to such facilities may only be permitted if they are floodproofed in compliance with s. 7.5 to the flood protection elevation;

(b) Minor roads or nonessential utilities may be constructed at lower elevations if they are designed to withstand flood forces to the regional flood elevation.

(8) SEWAGE SYSTEMS: All on-site sewage disposal systems shall be floodproofed, pursuant to s. 7.5, to the flood protection elevation and shall meet the provisions of all local ordinances and ch. COMM 83, Wis. Adm. Code. NOTE: Language added to emphasize that minimum floodproofing requirements must be met. NR 116.13(8)

(9) WELLS: All wells shall be floodproofed, pursuant to s. 7.5, to the flood protection elevation and shall meet the provisions of chs. NR 811 and NR 812, Wis. Adm. Code. NOTE: Language added to emphasize that minimum floodproofing requirements must be met. NR 116.13(9)

(10) SOLID WASTE DISPOSAL SITES: Disposal of solid or hazardous waste is prohibited in floodfringe areas. NR 116.13(10)

(11) DEPOSITION OF MATERIALS: Any deposited material must meet all the provisions of this ordinance. NR 116.13(11)

(12) MOBILE HOMES AND MANUFACTURED HOMES

NOTE: The title has been changed because the federal government only uses the term "manufactured home."

(a) Owners or operators of all ~~mobile~~/manufactured home parks and subdivisions shall provide adequate surface drainage to minimize flood damage, and prepare, secure approval and file an evacuation plan, indicating vehicular access and escape routes, with local emergency management authorities.

NR 116.13(2)

(b) In existing ~~mobile~~ ~~manufactured~~ home parks, all new homes, replacement homes on existing pads, and substantially improved homes ~~and recreational vehicles that remain on site more than 180 days, or are unlicensed or not ready for highway use and which are placed or improved on a site located in the floodplain~~ shall:

NOTE: The recreational vehicle language has been moved to a separate section below and renamed "mobile recreational vehicle", which is the term used in ch. NR 116.

1. have the lowest floor elevated to the flood protection elevation; and

2. be anchored so they do not float, collapse or move laterally during a flood.

(c) Outside of existing manufactured home parks, including new ~~mobile~~ ~~manufactured~~ home parks and all single units outside of existing parks, all new, replacement and substantially improved ~~mobile/manufactured homes and recreational vehicles that remain on site more than 180 days, or are unlicensed or not ready for highway use and which are placed or improved on a site located in the floodplain~~ shall meet the residential development standards for the floodfringe in s. 4.3(2).

(13) MOBILE RECREATIONAL VEHICLES

All mobile recreational vehicles that are on site for 180 consecutive days or more or are not fully licensed and ready for highway use shall meet the elevation and anchoring requirements in s. 4.3 (12)(b) and (c). A mobile recreational vehicle is ready for highway use if it is on its wheels or jacking system, is attached to the site only by quick-disconnect utilities and security devices and has no permanently attached additions.

NOTE: Park model units cannot be regulated as a mobile recreational vehicle unless the campground operator can demonstrate that these units can be evacuated from the floodplain before the flooding event occurs.

NR 116.13(3m)(c)
44 CFR 60.3(c)14)

5.0 GENERAL FLOODPLAIN DISTRICT (GFP)

5.1 APPLICABILITY

The provisions for this district shall apply to all floodplains for which regional flood data is not available. As adequate data becomes available, appropriate floodway and floodfringe districts shall be delineated. The provisions for this district shall apply to all floodplains for which flood profiles are not available or where flood profiles are available but floodways have not been delineated. Floodway and floodfringe districts shall be delineated when adequate data is available.

NOTE: This section has been rewritten for clarity. For development proposed in areas where no engineering data is available, floodway and floodfringe limits must be determined to decide if the use can be permitted and what effect the development will have on flood heights and velocities.

NR 116.14

5.2 PERMITTED USES

Pursuant to s. 5.4, it shall be determined whether the proposed use is located within a floodway or floodfringe area.

NOTE: The general floodplain district applies to those areas where the floodway and floodfringe boundaries are not delineated and where there are no flood profiles. All development within the general floodplain district must have a detailed analysis to determine which regulations apply. S. 7.1(2) explains who is responsible for providing the information for the case-by-case analysis. The evaluation procedure is discussed in s. 5.4. In cases where it is determined that the delineation of the flood hazard zone is incorrect, follow the provisions of s. 1.5(4). If the area is incorrectly mapped, the map should be revised as specified in s. 8.0.

NR 116.14

Those uses permitted in floodway (s. 3.2) and floodfringe areas (s. 4.2) are allowed within the general floodplain district, according to the standards of s. 5.3, provided that all permits or certificates required under s. 7.1 have been issued.

5.3 STANDARDS FOR DEVELOPMENT IN THE GENERAL FLOODPLAIN DISTRICT

Section 3.0 applies to floodway areas, s. 4.0 applies to floodfringe areas. The rest of this ordinance applies to either district.

5.4 DETERMINING FLOODWAY AND FLOODFRINGE LIMITS

NR 116.14

Upon receiving an application for development within the general floodplain district, the zoning administrator shall:

(1) Require the applicant to submit two copies of an aerial photograph or a plan which shows the proposed development with respect to the general floodplain district limits, stream channel, and existing floodplain developments, along with a legal description of the property, fill limits and elevations, building floor elevations and flood proofing measures;

NR 116.20(2)

(2) Require the applicant to furnish any of the following information deemed necessary by the Department to evaluate the effects of the proposal upon flood height and flood flows, regional flood elevation and to determine floodway boundaries:

(a) A typical valley cross-section showing the stream channel, the floodplain adjoining each side of the channel, the cross-sectional area to be occupied by the proposed development, and all historic high water information;

(b) Plan (surface view) showing elevations or contours of the ground; pertinent structure, fill or storage elevations; size, location and layout of all proposed and existing structures on the site; location and elevations of streets, water supply, and sanitary facilities; soil types and other pertinent information;

(c) Profile showing the slope of the bottom of the channel or flow line of the stream;

(d) Specifications for building construction and materials, floodproofing, filling, dredging, channel improvement, storage, water supply and sanitary facilities.

(3) Transmit one copy of the information described in subs. (1) and (2) to the Department Regional office along with a written request for technical assistance to establish regional flood elevations and, where applicable, floodway data. Where the provisions of s. 7.1(2)(c) apply, the applicant shall provide all required information and computations to delineate floodway boundaries and the effects of

the project on flood elevations.

6.0 NONCONFORMING USES

6.1 GENERAL

(1) **APPLICABILITY**

s. 59.69 Stats.

If these standards conform with s. 59.69(10), Stats., for counties or s. 62.23(7)(h), Stats., for cities and villages, they shall apply to all modifications or additions to any nonconforming use or structure and to the use of any structure or premises which was lawful before the passage of this ordinance or any amendment thereto.

(2) The existing lawful use of a structure or its accessory use which is not in conformity with the provisions of this ordinance may continue subject to the following conditions:

(a) No modification or addition to a nonconforming use or structure shall be permitted unless the modification or addition complies with this ordinance. The words "modification" and "addition" include, but are not limited to, any alteration, addition, modification, structural repair, rebuilding or replacement of any such existing use, structure or accessory structure or use. Ordinary maintenance repairs are not considered an extension, modification or addition; these include painting, decorating, paneling and the replacement of doors, windows and other nonstructural components and the maintenance, repair or replacement of existing private sewage or water supply systems or connections to public utilities. Ordinary maintenance repairs do not include any costs associated with the repair of a damaged structure.

NOTE: When modifications or additions are made to nonconforming structures or structures with a nonconforming use, the fair market value of all labor and material costs associated with the addition – structural and nonstructural - count toward the 50% limit.

NR 116.15(1)(a)

NOTE: The exclusions listed here for "ordinary maintenance repairs" pertain only to work done on existing legal nonconforming structures and structures with a nonconforming use.

The construction of a deck that does not exceed 200 square feet and that is adjacent to the exterior wall of a principal structure is not an extension, modification or addition. The roof of the structure may extend over a portion of the deck in order to provide safe ingress and egress to the principal structure.

NOTE: This provision was added to allow a small deck with an associated roof for safety purposes. This was a rule change to s. NR 116.15(1)(as), enacted in 2004.

NR 116.15(1)(as)

(b) If a nonconforming use or the use of a nonconforming structure is discontinued for 12

NOTE: Not occupying a structure for 12 consecutive months doesn't necessarily

NR 116.15(1)(b)

consecutive months, it is no longer permitted and any future use of the property, and any structure or building thereon, shall conform to the applicable requirements of this ordinance;

constitute "discontinuance." Please consult legal counsel for clarification of applicable case law.

(c) The municipality shall keep a record which lists all nonconforming uses and nonconforming structures, their present equalized assessed value, the cost of all modifications or additions which have been permitted, and the percentage of the structure's total current value those modifications represent;

NOTE: This is both a state and federal requirement, since FEMA's substantial improvement provisions are based on the costs associated with modifications or additions to floodplain structures.

NR 116.19(2)(c)

(d) No modification or addition to any nonconforming structure or any structure with a nonconforming use, which over the life of the structure would exceed 50% of its present equalized assessed value, shall be allowed unless the entire structure is permanently changed to a conforming structure with a conforming use in compliance with the applicable requirements of this ordinance. Contiguous dry land access must be provided for residential and commercial uses in compliance with s. 4.3(2). The cost of elevating a nonconforming building or a building with a nonconforming use to the flood protection elevation are excluded from the 50% provisions of this paragraph;

Note: Cost for elevating a nonconforming structure to provide flood protection have been exempted from the 50% rule.

NR 116.15 (1)(c)

(e) 1. Except as provided in subd. 2., if any nonconforming structure or any structure with a nonconforming use is destroyed or is substantially damaged, it cannot be replaced, reconstructed or rebuilt unless the use and the structure meet the current ordinance requirements. A structure is considered substantially damaged if the total cost to restore the structure to its pre-damaged condition equals or exceeds 50% of the structure's present equalized assessed value.

NOTE: The term "substantially" has been substituted for "so badly damaged" since it is the term defined and used in ch. NR 116.

NR 116.15(1)(d)

Recent statutory changes allow non-flood damaged structures to be rebuilt without being in compliance with current zoning regulations if the federal requirements noted in subdivision 2. below are met. This section was modified to clarify the conditions that apply.

2. For nonconforming buildings that are damaged or destroyed by a nonflood disaster, the repair or reconstruction of any such nonconforming building may be permitted in order to restore it after the nonflood disaster, provided that the nonconforming structure after repair or reconstruction meets the minimum requirements of regulations promulgated under 42 USC 4001 to 4129.

NOTE: The federal regulations cited here require the rebuilt structure to be at or above the BFE, to be properly floodproofed (including wells and waste disposal systems), to cause no increase in flood elevations at the site and to ensure that the flood carrying capacity of the watercourse is maintained.

s. 87.30 (1d) Stats.

(f) A nonconforming historic structure may be altered if the alteration will not preclude the structures continued designation as a historic

NOTE: This section reflects both minimum state and federal requirements for alterations to historic structures.

44 CFR, Part 60.6

structure, the alteration will comply with s. 3.3 (1), flood resistant materials are used, and construction practices and floodproofing methods that comply with s. 7.5 are used.

Only structures listed on a recognized historic register are eligible for this exception.

6.2 FLOODWAY AREAS

(1) No modification or addition shall be allowed to any nonconforming structure or any structure with a nonconforming use in a floodway area, unless such modification or addition:

NOTE: These criteria for modifications or additions to nonconforming floodway uses and structures are more restrictive than those contained in the floodfringe nonconforming use provisions (s. 6.3) due to the increased hazards for floodway development.

NR 116.15(2)

(a) Has been granted a permit or variance which meets all ordinance requirements;

NR 116.15(2)(a)

(b) Meets the requirements of s. 6.1;

(c) Will not increase the obstruction to flood flows or regional flood height; and

NR 116.15(2)(a)1.

(d) Any addition to the existing structure shall be floodproofed, pursuant to s. 7.5, by means other than the use of fill, to the flood protection elevation.

Note: The FEMA website – www.fema.gov – has information on alternative methods of floodproofing structures.

NR 116.15(2)(a)2.

(2) No new on-site sewage disposal system, or addition to an existing on-site sewage disposal system, except where an addition has been ordered by a government agency to correct a hazard to public health, shall be allowed in a floodway area. Any replacement, repair or maintenance of an existing on-site sewage disposal system in a floodway area shall meet the applicable requirements of all municipal ordinances and ch. COMM 83, Wis. Adm. Code.

NOTE: No new on-site sewage disposal systems, or private water supply systems are allowed in the floodway district. Replacement of failing existing systems may be allowed providing they are replaced in compliance with ch. COMM 83.

NR 116.15(2)(b)

(3) No new well or modification to an existing well used to obtain potable water shall be allowed in a floodway area. Any replacement, repair or maintenance of an existing well in a floodway area shall meet the applicable requirements of all municipal ordinances and chs. NR 811 and NR 812, Wis. Adm. Code.

NR 116.15(2)(c)

6.3 FLOODFRINGE AREAS

NR 116.15(3)

(1) No modification or addition shall be allowed to any nonconforming structure or any structure with a nonconforming use unless such modification or addition has been granted a permit or variance by

NOTE: These are the general criteria for modifications or additions to nonconforming uses and structures in floodfringe areas, but the 50% cost limitations imposed by s. 6.1(2)(d) also apply. Where the 50% limit is

NR 116.15(3)(a)

the municipality, and the modification or addition is placed on fill or floodproofed to the flood protection elevation in compliance with the standards for that particular use in s. 4.3, except where s. 6.3(2) is applicable.

exceeded in the floodfringe, the entire structure must be floodproofed or placed on fill. The cost limitations placed on modifications and additions to nonconforming floodfringe structures is a minimum requirement of the National Flood Insurance Program (NFIP).

(2) Where compliance with the provisions of sub. (1) would result in unnecessary hardship and only where the structure will not be used for human habitation or be associated with a high flood damage potential, the Board of Adjustment/Appeals, using the procedures established in s. 7.3, may grant a variance from those provisions of sub. (1) for a modification or addition, using the criteria listed below. Such modifications or additions, which are protected to elevations lower than the flood protection elevation, may be permitted if:

- (a) No floor is allowed below the regional flood elevation for residential or commercial structures;
- (b) Human lives are not endangered;
- (c) Public facilities, such as water or sewer, will not be installed;
- (d) Flood depths will not exceed two feet;
- (e) Flood velocities will not exceed two feet per second; and
- (f) The structure will not be used for storage of materials as described in s. 4.3(6).

(3) If neither the provisions of par. (1) or (2) above can be met, one addition to an existing room in a nonconforming building or a building with a nonconforming use may be allowed in the floodfringe, if the addition:

- (a) Meets all other regulations and will be granted by permit or variance;
- (b) Does not exceed 60 square feet in area; and
- (c) In combination with other previous modifications or additions to the building, does not exceed 50% of the present equalized assessed value

NOTE: These are the minimum standards that the board of adjustment/appeals must use in deciding whether or not to allow variances from the provisions contained in s. 4.3. Where a variance such as this is granted, the board must also inform the property owner in writing that increased flood insurance premiums may result.

NR 116.15(3)(b)

NR 116.15(3)(c)

of the building.

(4) All new private sewage disposal systems, or additions to, replacement, repair or maintenance of a private sewage disposal system, shall meet all the applicable provisions of all local ordinances and ch. COMM 83, Wis. Adm. Code.

NR 116.15(3)(d)

(5) All new wells, or additions to, replacement, repair or maintenance of a well, shall meet the applicable provisions of this ordinance and ch. NR 811 and NR 812, Wis. Adm. Code.

NR 116.15(3)(e)

7.0 ADMINISTRATION

Where a zoning administrator, planning agency or a board of adjustment/appeals has already been appointed to administer a zoning ordinance adopted under ss. 59.69, 59.692 or 62.23(7), Stats., these officials shall also administer this ordinance.

NOTE: Refer to ch. 2 of the Floodplain-Shoreland Management Guide for an explanation of the duties and responsibilities of the zoning administrator, board of adjustment/appeals and zoning agency. In addition, handbooks have been distributed by the Department to cities, villages and counties. Local training sessions can be arranged by contacting the Department.

NR 116.19(1)

7.1 ZONING ADMINISTRATOR

(1) The zoning administrator is authorized to administer this ordinance and shall have the following duties and powers:

NOTE: The zoning administrator duties include assisting applicants in preparing both their permit applications and, in cases where the application is denied and the applicant desires to appeal, assisting them in filling out the appeal form which is submitted to the board of adjustment/appeals for either a variance or an interpretation. When a written application for a permit is made the zoning administrator must inform the applicant in writing as to why a permit is denied.

NR 116.19(2)

(a) Advise applicants of the ordinance provisions, assist in preparing permit applications and appeals, and assure that the regional flood elevation for the proposed development is shown on all permit applications.

NR 116.19(2)(a)

(b) Issue permits and inspect properties for compliance with provisions of this ordinance and issue certificates of compliance where appropriate.

NR 116.19(2)(b)

(bm) Inspect all damaged floodplain structures and perform a substantial damage assessment to determine if substantial damage to the structures has occurred.

Note: Both state regulations and federal requirements require that substantial damage inspections be performed.

(c) Keep records of all official actions such as:

NR 116.12(2)(c)

1. All permits issued, inspections made, and work approved;

2. Documentation of certified lowest floor and regional flood elevations for floodplain development;

NOTE: The Department recommends keeping a list of certified ground surface elevations which can be used to determine if building floor and ground surface elevations are in compliance with the ordinance elevation standards.

3. Records of water surface profiles, floodplain zoning maps and ordinances, nonconforming uses and structures, including changes, appeals, variances and amendments.

4. All substantial damage assessment reports for floodplain structures.

NOTE: This was added to highlight the importance of documenting damage assessments.

44 CFR 60.3

(d) Submit copies of the following items to the Department Regional office:

NR 116.19(2)(d)

1. Within 10 days of the decision, a copy of any decisions on variances, appeals for map or text interpretations, and map or text amendments;

NOTE: Sending this information to the Department is critical if the ordinance text or map is being amended and where variances from the flood protection elevation or development standards are sought. Where additional technical assistance is needed or requested, contact the local Department Regional office in addition to submitting the information to them for their review.

NR 116.20(2)(d)

2. Copies of any case-by-case analyses, and any other information required by the Department including an annual summary of the number and types of floodplain zoning actions taken.

3. Copies of substantial damage assessments performed and all related correspondence concerning the assessments.

NOTE: This was added to correspond to the new substantial damage language.

44 CFR 60.3

Note: Information on substantial damage assessments is available on the DNR website – <http://dnr.wi.gov/org/water/wm/dsfm/flood/title.htm>

(e) Investigate, prepare reports, and report violations of this ordinance to the municipal zoning agency and attorney for prosecution. Copies of the reports shall also be sent to the Department Regional office.

NOTE: To enforce the ordinance and prosecute a violation, the prosecutor will need a case record of all relevant information, including photographs, written and taped testimony, records of other hearings

NR 116.20(4)

concerning the violation and any other pertinent information which can be obtained. The zoning administrator cannot be too careful or too meticulous in preparing materials which may eventually be used in an enforcement action.

(f) Submit copies of text and map amendments and biennial reports to the FEMA Regional office.

44 CFR 60.3

(2) LAND USE PERMIT

A land use permit shall be obtained before any new development or any repair or change in the use of a building or structure, including sewer and water facilities, may be initiated. Application to the zoning administrator shall include:

NOTE: The ZA must first determine which flood zone the site is in. If floodplain boundaries are not established, a case-by-case analysis must be done so the structure can be adequately protected from flooding.

NR 116.20(1)

The elevation of the lowest floor, adjacent grade and any fill is required using National Geodetic Vertical Datum. The ZA can then compare that elevation with the flood profile without having to make a conversion to a local or assumed datum.

All required permits must be applied for and issued before any floodplain development can be allowed. If no permit is issued, the applicant would be in violation of the ordinance since a permit was never obtained, even though the use and the construction of the structure may be in compliance with the minimum development standards.

(a) GENERAL INFORMATION

NR 116.20(2)

1. Name and address of the applicant, property owner and contractor;
2. Legal description, proposed use, and whether it is new construction or a modification;

(b) SITE DEVELOPMENT PLAN

NR 116.20(2)

A site plan drawn to scale shall be submitted with the permit application form and shall contain:

1. Location, dimensions, area and elevation of the lot;
2. Location of the ordinary highwater mark of any abutting navigable waterways;

3. Location of any structures with distances measured from the lot lines and street center lines;
4. Location of any existing or proposed on-site sewage systems or private water supply systems;
5. Location and elevation of existing or future access roads;
6. Location of floodplain and floodway limits as determined from the official floodplain zoning maps;
7. The elevation of the lowest floor of proposed buildings and any fill using National Geodetic and Vertical Datum (NGVD);
8. Data to determine the regional flood elevation in NGVD at the location of the development and to determine whether or not the requirements of s. 3.0 or 4.0 are met; and
9. Data sufficient to determine if the proposed development will cause an obstruction to flow or an increase in regional flood height or discharge according to s. 2.1. This may include any of the information noted in s. 3.3(1).

(c) DATA REQUIREMENTS TO ANALYZE DEVELOPMENTS

NR 116.20(2)(a)4.

The applicant shall provide all survey data and computations required to show the effects of the project on flood heights, velocities and floodplain storage, for all subdivision proposals, as "subdivision" is defined in ch. 236, Stats., and other proposed developments exceeding 5 acres in area or where the estimated cost exceeds \$125,000. The applicant shall provide:

NOTE: The NFIP requires that "all subdivision proposals and other proposed new developments greater than 50 lots or 5 acres, whichever is less, include base flood elevation data." When subdivisions or other development is planned in a flood-prone area, FEMA standards require that (1) all such proposals minimize flood damage within the flood-prone area, (2) all public utilities and facilities, such as sewer, gas, electrical, and water systems are located and constructed to minimize or eliminate flood damage, and (3) adequate drainage is provided to reduce exposure to flood hazards.

Section 236.02(8), Stats., defines "subdivision" as the division of a tract of land where five or more parcels or building sites of 1½ acres each or less in area are created by a single division or by successive divisions within a period of five years.

1. An analysis of the effect of the development on the regional flood profile, velocity of flow and floodplain storage capacity;
2. A map showing location and details of vehicular access to lands outside the floodplain; and
3. A surface drainage plan showing how flood damage will be minimized.
4. The estimated cost of the proposal shall include all structural development, landscaping, access and road development, utilities, and other pertinent items, but need not include land costs.

NOTE: Subd. 2 was removed

(d) EXPIRATION

All permits issued under the authority of this ordinance shall expire _____ days after issuance.

NOTE: The reference to 180 days was removed.

(3) CERTIFICATE OF COMPLIANCE

NR 116.20(3)

Except where no permit is required, no land shall be occupied or used, and no building which is hereafter constructed, altered, added to, modified, repaired, rebuilt or replaced shall be occupied until a certificate of compliance is issued by the zoning administrator, subject to the following provisions:

- (a) The certificate of compliance shall show that the building or premises or part thereof, and the proposed use, conform to the provisions of this ordinance;
- (b) Application for such certificate shall be concurrent with the application for a permit;
- (c) If all ordinance provisions are met, the certificate of compliance shall be issued within 10 days after written notification that the permitted work is completed;
- (d) The applicant shall submit a certification signed by a registered professional engineer or registered land surveyor that the fill, lowest floor and floodproofing elevations are in compliance with the permit issued. Floodproofing measures also require certification by a registered professional engineer or registered architect that floodproofing measures

meet the requirements of s. 7.5.

(4) OTHER PERMITS

The applicant must secure all necessary permits from federal, state, and local agencies, including those required by the U.S. Army Corps of Engineers under s. 404 of the Federal Water Pollution Control Act, Amendments of 1972, 33 U.S.C. 1344.

NOTE: The Corps must be consulted for all development within the navigable portion of all bodies of water including adjacent wetland areas. The ZA should advise applicants to contact the Corps before the municipality issues a permit. Permits from the Department, under ch. 30 or 31, Stats., are obtained from the local DNR office.

7.2 ZONING AGENCY

NOTE: In many villages, the board of trustees also serves as the planning or zoning agency. It is permissible for both a county board of supervisors and a city council to hold hearings and take direct action on zoning map and text amendments. Procedures in ss. 59.69 and 62.23, Stats., refer zoning matters from the governing body to the committee responsible for the zoning functions (generally the zoning committee or agency). This committee holds the hearing, takes testimony, records findings of fact and makes recommendations to the governing body for final action on amendments, or to the Board for variances or other appeals. See s. 8.2 and the explanations for the procedures to follow when processing a petition for a map or text amendment. The planning or zoning agency oversees the zoning administrator's duties, and recommends action to the governing Board or Council for text or map amendments.

NR 116.19(3)

(1) The _____ (zoning agency or planning committee) shall:

(a) oversee the functions of the office of the zoning administrator; and

(b) review and advise the Governing body on all proposed amendments to this ordinance, maps and text.

(2) This zoning agency shall not

(a) grant variances to the terms of the ordinance in place of action by the Board of Adjustment/Appeals; or

s. 59.692 Stats.

(b) amend the text or zoning maps in place of

official action by the Governing body.

7.3 BOARD OF ADJUSTMENT/APEALS

The Board of Adjustment/Appeals, created under s. 59.694, Stats., for counties or s. 62.23(7)(e), Stats., for cities or villages, is hereby authorized or shall be appointed to act for the purposes of this ordinance. The Board shall exercise the powers conferred by Wisconsin Statutes and adopt rules for the conduct of business. The zoning administrator may not be the secretary of the Board.

NOTE: Under s. 59.694, Stats., the county board of supervisors is required to adopt rules for the conduct of board of adjustment meetings. In cities and villages, under s. 62.23(7)(e)3, Wis. Stats., the Board of Appeals itself is required to adopt rules for its meetings. s. 59.694 Stats.

The Board hears appeals from persons who disagree with the interpretation of the floodplain ordinance or feel that they can demonstrate hardship and be allowed to deviate from the development standards. The Board has two primary functions: (1) It can interpret the meaning of the ordinance and its provisions as well as the location of district boundaries in dispute; and (2) It is the agency designated by statute to issue variances to provide relief from the strict requirements of the ordinance.

Before the Board can grant a variance, it must be clearly demonstrated and documented how the decision was made and in what specific way hardship was shown. (Refer to the criteria in the Floodplain-Shoreland Guide for what legally constitutes unnecessary hardships.)

If this ordinance is more restrictive than the underlying land use zoning ordinance, the most restrictive provisions in each ordinance must always be applied.

(1) Powers and Duties: The Board of Adjustment/Appeals shall:

(a) Appeals - Hear and decide appeals where it is alleged there is an error in any order, requirement, decision or determination made by an administrative official in the enforcement or administration of this ordinance.

NR 116.19(4)(a)

(b) Boundary Disputes - Hear and decide disputes concerning the district boundaries shown on the official floodplain zoning map.

(c) Variances - Hear and decide, upon appeal, variances from the ordinance standards.

NR 116.19(4)(c)

(2) APPEALS TO THE BOARD

- (a) Appeals to the board may be taken by any person aggrieved, or by any officer or department of the municipality affected by any decision of the zoning administrator or other administrative officer. Such appeal shall be taken within 30 days unless otherwise provided by the rules of the board, by filing with the official whose decision is in question, and with the board, a notice of appeal specifying the reasons for the appeal. The official whose decision is in question shall transmit to the board all records regarding the matter appealed.

NR 116.21(5)

(b) NOTICE AND HEARING FOR APPEALS INCLUDING VARIANCES

NOTE: This establishes the procedures to be followed by the Board in considering appeals from decisions made by the ZA. The final decision should include notice that the applicant may appeal the Board's decision to a court of record. Failure to follow the correct zoning appeal procedure may result in the dismissal of an action taken against the municipality, the ZA, or the Board.

ss. 59.694,
62.23(7)(e), Stats.1. Notice - The board shall:

NR 116.20(2)(c)

- a. Fix a reasonable time for the hearing;
- b. Publish adequate notice pursuant to Wisconsin Statutes, specifying the date, time, place and subject of the hearing;
- c. Assure that notice shall be mailed to the parties in interest and the Department Regional office at least 10 days in advance of the hearing.

NR 116.20(2)(d)

2. Hearing - Any party may appear in person or by agent or attorney. The board shall:

- a. Resolve boundary disputes according to s. 7.3(3).
- b. Decide variance applications according to s. 7.3(4).
- c. Decide appeals of permit denials according to s. 7.4.

(c) DECISION: The final decision regarding the appeal or variance application shall:

1. Be made within a reasonable time; NR 116.19(4)(e)
2. Be sent to the Department Regional office within 10 days of the decision; NR 116.20(2)(d)
3. Be a written determination signed by the chairman or secretary of the Board; NR 116.19(4)(e)
4. State the specific facts which are the basis for the Board's decision; NR 116.21(5)
5. Either affirm, reverse, vary or modify the order, requirement, decision or determination appealed, in whole or in part, dismiss the appeal for lack of jurisdiction or grant or deny the variance application; NR 116.21(5)
6. Include the reasons for granting an appeal, describing the hardship demonstrated by the applicant in the case of a variance, clearly stated in the recorded minutes of the Board proceedings. NR 116.21(5)

(3) BOUNDARY DISPUTES

The following procedure shall be used by the Board in hearing disputes concerning floodplain district boundaries:

NOTE: Where flood elevations are available, those elevations are the governing factor. The applicant must submit the elevation of the property and cross-sections showing where that elevation appears on the flood profile. A determination can then be made by the zoning administrator according to s. 1.5(4). If the map boundaries are in error, the Board should direct the applicant or the zoning agency to petition the governing body for a map amendment. When the amendment action is begun, both the Department and FEMA should be informed. Please refer to the amendment procedures in the Floodplain-Shoreland Guide.

- (a) If a floodplain district boundary is established by approximate or detailed floodplain studies, the flood elevations or profiles shall prevail in locating the boundary. If none exist, other evidence may be examined. NR 116.11
- (b) In all cases, the person contesting the boundary location shall be given a reasonable opportunity to present arguments and technical evidence to the Board.
- (c) If the boundary is incorrectly mapped, the Board

should notify the zoning committee or the person contesting the boundary location to petition the governing body for a map amendment according to s. 8.0.

(4) VARIANCE

- (a) The Board may, upon appeal, grant a variance from the standards of this ordinance if an applicant convincingly demonstrates that:

NOTE: Use variances are not allowed under floodplain zoning; the applicant would have to apply for a rezoning to build in the floodway. No variance from the flood protection elevation is allowed due to the danger to human life, health and property. Floodfringe sites can be developed at regional flood elevation if they are properly floodproofed and the standards in s. 6.3(2) are met.

NR 116.21(4)

When a variance is granted, the applicant must be informed in writing of the risks to life and property and that flood insurance premiums may go up. A copy of that statement should be attached to the file. The ZA should counsel the applicant to contact their insurance agent to find the most cost-effective elevation to build to.

1. Literal enforcement of the ordinance provisions will cause unnecessary hardship;
2. The hardship is due to adoption of the floodplain ordinance and unique property conditions. If the conditions are common to adjacent lots or premises, the ordinance or map would need to be amended;
3. The variance is not contrary to the public interest; and
4. The variance is consistent with the purpose of this ordinance in s. 1.3.

Ss. 59.69,
62.23(7)(e), Stats.

(b) In addition to the criteria in par. (a), to qualify for a variance under FEMA regulations, the following criteria must be met

NOTE: These standards are derived from the regulations in Part 60.6, Code of Federal Regulations. 44 CFR 60.6

1. The variance may not cause any increase in the regional flood elevation;
2. Variances can only be granted for lots that are less than one-half acre and are contiguous to existing structures constructed below the RFE;
3. Variances shall only be granted upon a showing

NOTE: FEMA would require sufficient justification for larger lot sizes.

of good and sufficient cause; shall be the minimum relief necessary, shall not cause increased risks to public safety or nuisances; shall not increase costs for rescue and relief efforts; and shall not be contrary to the purpose of the ordinance.

(c) A variance shall not:

NR 116.21(4)

1. Grant, extend or increase any use prohibited in the zoning district.
2. Be granted for a hardship based solely on an economic gain or loss.
3. Be granted for a hardship which is self-created.
4. Damage the rights or property values of other persons in the area.

~~Allow any floor of a basement or crawlway below the regional flood elevation for residential or commercial structures.~~

NOTE: A recent Wisconsin Supreme Court decision struck down this provision.

5. Allow actions without the amendments to this ordinance or map(s) required in s. 8.1.

6. Allow any alteration of an historic structure, including its use, which would preclude its continued designation as an historic structure.

44 CFR 60.6(a)

(d) When a floodplain variance is granted the Board shall notify the applicant in writing that it may increase flood insurance premiums and risks to life and property. A copy shall be maintained with the variance record.

44 CFR 60.6(a)(5)

7.4 TO REVIEW APPEALS OF PERMIT DENIALS

(1) The Zoning Agency identified in s. 7.2 or the Board identified in s. 7.3 shall review all data related to the appeal. This may include:

NR 116.21(5)

(a) Permit application data listed in s. 7.1(2).

(b) Floodway/floodfringe determination data in s. 5.4.

(c) Data listed in s. 3.3(1)(b)2. where the applicant has not submitted this information to the zoning

administrator.

(a) Other data submitted with the application, or submitted to the Board with the appeal.

(2) For appeals of all denied permits the Board shall:

NR 116.19(4)

(a) Follow the procedures of s. 7.3;

(b) Consider zoning agency recommendations; and

(c) Either uphold the denial or grant the appeal.

(3) For appeals concerning increases in regional flood elevation the Board shall:

(a) Uphold the denial where the Board agrees with the data showing an increase in flood elevation. Increases equal to or greater than 0.01 foot may only be allowed after amending the flood profile and map and all appropriate legal arrangements are made with all adversely affected property owners.

NOTE: To overturn the ZA's denial, the Board or Zoning Agency must review the data supplied by the applicant to the ZA with the permit application and determine if the denial was correct. (The Zoning Agency in s. 7.2 can review and recommend action to the Board.) The Board must uphold the denial if insufficient data was provided. Where sufficient data was provided, the Board may only overturn the denial if the applicant provides proof that the project will not cause 0.01 foot or greater increase in regional flood height. If review of all data shows the ZA correctly denied the permit due to an increase in flood height, the Board should notify the applicant that amendments to the profile and map are needed to allow the development. Such amendments can be approved only if legal arrangements are made with all adversely affected property owners. Rezoning to allow a use not permitted by the ordinance requires full analysis and amendments to the map and profiles.

(b) Grant the appeal where the Board agrees that the data properly demonstrates that the project does not cause an increase equal to or greater than 0.01 foot provided no other reasons for denial exist.

7.5 FLOODPROOFING

(1) No permit or variance shall be issued until the applicant submits a plan certified by a registered professional engineer or architect that the floodproofing measures will protect the structure or development to the flood protection elevation.

NOTE: All new structures or additions to existing structures must be watertight or dry floodproofed to the flood protection elevation. The lowest floor or basement floor must either be elevated or floodproofed to the flood

NR 116.16(2)

protection elevation in order to maintain these standards. Before the ZA can grant a permit involving floodproofing requirements, the applicant must submit a certification signed by a registered professional engineer or architect that the design for floodproofing measures is adequate to protect the development to the flood protection elevation.

(2) Floodproofing measures shall be designed to:

NR 116.16(1)

(a) Withstand flood pressures, depths, velocities, uplift and impact forces and other regional flood factors;

For additional information on design standards for floodproofing buildings and structures, please consult the U.S. Army Corps of Engineers web page, www.usace.army.mil or the FEMA web page, www.fema.gov.

(b) Protect structures to the flood protection elevation;

(c) Anchor structures to foundations to resist flotation and lateral movement; and

(d) Insure that structural walls and floors are watertight to the flood protection elevation, and the interior remains completely dry during flooding without human intervention.

For more information addressing the importance of protecting structures to mitigate flood damages see, "[Design Guidelines for Flood Damage Reduction](#)," dated October 1981, prepared for FEMA by the American Institute of Architects (AIA) Research Corporation, 1735 New York Avenue N.W.; Washington, D.C. 20006.

(3) Floodproofing measures could include:

NR 116.16(2)(a)

(a) Reinforcing walls and floors to resist rupture or collapse caused by water pressure or floating debris.

(b) Adding mass or weight to prevent flotation.

(c) Placing essential utilities above the flood protection elevation.

(d) Installing surface or subsurface drainage systems to relieve foundation wall and basement floor pressures.

(e) Constructing water supply wells and waste

treatment systems to prevent the entry of flood waters.

(f) Putting cutoff valves on sewer lines or eliminating gravity flow basement drains.

7.6 PUBLIC INFORMATION

NR 116.20 (5)

(1) The municipality may place marks to show the depth of inundation during the regional flood.

(2) All floodplain maps, engineering data and regulations shall be available and widely distributed.

(3) All real estate transfers of floodplain property should show what floodplain zoning district the real property is in.

8.0 AMENDMENTS

8.1 GENERAL

The governing body may change or supplement the floodplain zoning district boundaries and this ordinance in the manner provided by law. Actions which require an amendment include, but are not limited to, the following:

NOTE: Amendments are required when development or property is: a) being rezoned; b) causing 0.01 foot increase or more in flood height; or c) obstructing floodway flows.

NR 116.21(6)

Rezoning may be from floodway to floodfringe to allow a use prohibited in the floodway, or it may be from floodfringe to non-floodplain to allow a structure to be removed from the floodplain provided the property owner secures a final federal Letter of Map Change to complete the rezoning. This are explained in the Floodplain - Shoreland Guidebook. Land can only be removed from the floodplain by filling the entire parcel two feet above the RFE and contiguous to lands outside the floodplain, according to s. NR 116.18. Development below the RFE cannot be allowed for residential or commercial development. Other development can be, provided it's completely dry floodproofed to the flood protection elevation without human intervention.

An amendment is also required for any change made to the ordinance text, the official map, or corresponding profiles. The Wisconsin enabling statutes for cities and villages, s. 62.23(7)(d), and for counties, s. 59.69, establish specific zoning ordinance amendment procedures. These procedures must be followed for all amendments made to

this ordinance; failure to do so could result in the amendment being declared invalid.

- (1) Any change to the official floodplain zoning map, including the floodway line or boundary of any floodplain area.
- (2) Correction of discrepancies between the water surface profiles and floodplain zoning maps.
- (3) Any fill in the floodplain which raises the elevation of the filled area to a height at or above the flood protection elevation and is contiguous to land lying outside the floodplain.
- (4) Any fill or floodplain encroachment that obstructs flow, increasing regional flood height 0.01 foot or more.
- (5) Any upgrade to a floodplain zoning ordinance text required by s. NR 116.05, Wis. Adm. Code, or otherwise required by law, or for changes by the municipality.
- (6) All channel relocations and changes to the maps to alter floodway lines or to remove an area from the floodway or the floodfringe that is based on a base flood elevation from a FIRM requires prior approval by FEMA.

NOTE: FEMA must review and approve all changes to a FIRM.

Note: Consult the FEMA web site - www.fema.gov - for a current map change fee schedule.

8.2 PROCEDURES

Ordinance amendments may be made upon petition of any interested party according to the provisions of s. 62.23, Stats., for cities and villages, or s. 59.69, Stats., for counties. Such petitions shall include all necessary data required by ss. 5.4 and 7.1(2).

NR 116.21(6)(b)

- (1) The proposed amendment shall be referred to the zoning agency for a public hearing and recommendation to the governing body. The amendment and notice of public hearing shall be submitted to the Department Regional office for review prior to the hearing. The amendment procedure shall comply with the provisions of s. 62.23, Stats., for cities and villages or s. 59.69, Stats., for counties.

NR 116.21(6)(c)

(2) No amendments shall become effective until reviewed and approved by the Department.

NR 116.21(6)(e)

(3) All persons petitioning for a map amendment that obstructs flow, increasing regional flood height 0.01 foot or more, shall obtain flooding easements or other appropriate legal arrangements from all adversely affected property owners and notify local units of government before the amendment can be approved by the governing body.

(4) For amendments in areas with no water surface profiles, the zoning agency or board shall consider data submitted by the Department, the zoning administrator's visual on-site inspections and other available information. (See s. 1.5(4).)

9.0 ENFORCEMENT AND PENALTIES

Any violation of the provisions of this ordinance by any person shall be unlawful and shall be referred to the municipal attorney who shall expeditiously prosecute all such violators. A violator shall, upon conviction, forfeit to the municipality a penalty of not less than \$ _____ and not more than \$ _____, together with a taxable cost of such action. Each day of continued violation shall constitute a separate offense. Every violation of this ordinance is a public nuisance and the creation may be enjoined and the maintenance may be abated by action at suit of the municipality, the state, or any citizen thereof pursuant to s. 87.30, Stats.

NOTE: Wisconsin zoning law provides for the disposition of violations through forfeitures, injunctive relief (correction of the violation) or both. Forfeiture may be effective against relatively small violations. Injunctions and abatement may be the necessary steps where more egregious violations are involved, particularly if those violations will cause an increase in flood elevations affecting other property owners.

NR 116.20(4)

10.0 DEFINITIONS

Unless specifically defined below, words and phrases used in this ordinance shall have the same meaning as they have at common law and to give this ordinance its most reasonable application. Words used in the present tense include the future, the singular number includes the plural and the plural number includes the singular. The word "may" is permissive, "shall" is mandatory and not discretionary.

1) "A ZONES" - Those areas shown on the Official Floodplain Zoning Map which would be inundated by the regional flood. These areas may be numbered or unnumbered A Zones. The A Zones may or may not be reflective of flood profiles, depending on the availability of data for a

given area.

2) "ACCESSORY STRUCTURE OR USE" - A facility, structure, building or use which is accessory or incidental to the principal use of a property, structure or building. A detached subordinate structure or a use which is clearly incidental to and customarily found in connection with the principal structure or use to which it is related, and which is located on the same lot as that of the principal structure or use.

NOTE: Definition modified to conform to the definition used in NR 116.

3) "BASE FLOOD" - Means the flood having a one percent chance of being equaled or exceeded in any given year, as published by FEMA as part of a FIS and depicted on a FIRM.

NOTE: Definition added to reflect flood elevation terminology used on FIRM's.

4) "BASEMENT" - Any enclosed area of a building having its floor sub-grade, i.e., below ground level, on all sides.

5) "BUILDING" - See STRUCTURE.

6) "BULKHEAD LINE" - A geographic line along a reach of navigable water that has been adopted by a municipal ordinance and approved by the Department pursuant to s. 30.11, Stats., and which allows limited filling between this bulkhead line and the original ordinary highwater mark, except where such filling is prohibited by the floodway provisions of this ordinance.

7) "CAMPGROUND" Any parcel of land which is designed, maintained, intended or used for the purpose of providing sites for nonpermanent overnight use by 4 or more camping units, or which is advertised or represented as a camping area.

NOTE: Definition added

8) "CAMPING UNIT" - Any portable device, no more than 400 square feet in area, used as a temporary shelter, including but not limited to a tent, camping trailer, motor home, bus, van, pick-up truck or other mobile recreational vehicle.

NOTE: Definition added that is used in NR 116.

9) "CERTIFICATE OF COMPLIANCE" - A certification that the construction and the use of land or a building, the elevation of fill or the lowest floor of a structure is in compliance with all of the provisions of this ordinance.

10) "CHANNEL" - A natural or artificial

watercourse with definite bed and banks to confine and conduct normal flow of water.

11)"CRAWLWAYS" OR "CRAWL SPACE" - An enclosed area below the first usable floor of a building, generally less than five (5) feet in height, used for limited access to plumbing and electrical utilities.

12) "DECK" – An unenclosed exterior structure that has no roof or sides, but has a permeable floor which allows the infiltration of precipitation.

NOTE: Definition added for clarification

13)"DEPARTMENT" - The Wisconsin Department of Natural Resources.

14)"DEVELOPMENT" - Any artificial change to improved or unimproved real estate, including, but not limited to, the construction of buildings, structures or accessory structures; the construction of additions or alterations to buildings, structures or accessory structures; the repair of any damaged structure or the improvement or renovation of any structure, regardless of percentage of damage or improvement; the placement of buildings or structures; subdivision layout and site preparation; mining, dredging, filling, grading, paving, excavation or drilling operations; the storage, deposition or extraction of materials or equipment; and the installation, repair or removal of public or private sewage disposal systems or water supply facilities.

NOTE: Clause added to clarify that repairs are a type of development that is regulated under this ordinance.

15)"DRYLAND ACCESS" - A vehicular access route which is above the regional flood elevation and which connects land located in the floodplain to land outside the floodplain, such as a road with its surface above regional flood elevation and wide enough for wheeled rescue and relief vehicles.

16)"ENCROACHMENT" - Any fill, structure, equipment, building, use or development in the floodway.

17)"EXISTING MANUFACTURED HOME PARK OR SUBDIVISION" - A parcel of land, divided into two or more manufactured home lots for rent or sale, on which the construction of facilities for servicing the lots is completed before the effective date of this ordinance. At a minimum, this would include the installation of utilities, the construction

of streets and either final site grading or the pouring of concrete pads.

18)"EXPANSION TO EXISTING MOBILE/MANUFACTURED HOME PARK" -

The preparation of additional sites by the construction of facilities for servicing the lots on which the manufactured homes are to be affixed. This includes installation of utilities, construction of streets and either final site grading, or the pouring of concrete pads.

19)"FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA)" - The federal agency that administers the National Flood Insurance Program.

20)"FLOOD INSURANCE RATE MAP" (FIRM) - A map of a community on which the Federal Insurance Administration has delineated both special flood hazard areas (the floodplain) and the risk premium zones applicable to the community. This map can only be amended by the Federal Emergency Management Agency.

NOTE: Definition added which is used throughout this ordinance.

21)"FLOOD" or "FLOODING" - A general and temporary condition of partial or complete inundation of normally dry land areas caused by one of the following conditions:

- ✓ The overflow or rise of inland waters,
- ✓ The rapid accumulation or runoff of surface waters from any source,
- ✓ The inundation caused by waves or currents of water exceeding anticipated cyclical levels along the shore of Lake Michigan or Lake Superior, or
- ✓ The sudden increase caused by an unusually high water level in a natural body of water, accompanied by a severe storm, or by an unanticipated force of nature, such as a seiche, or by some similarly unusual event.

22)"FLOOD FREQUENCY" - The probability of a flood occurrence which is determined from statistical analyses. The frequency of a particular flood event is usually expressed as occurring, on the average, once in a specified number of years or as a percent (%) chance of occurring in any given year.

23)"FLOODFRINGE" - That portion of the floodplain outside of the floodway which is covered by flood waters during the regional flood and is generally associated with standing water rather than flowing water.

24)"FLOOD HAZARD BOUNDARY MAP" - A map designating approximate flood hazard areas. Flood hazard areas are designated as unnumbered A-Zones and do not contain floodway lines or regional flood elevations. This map forms the basis for both the regulatory and insurance aspects of the National Flood Insurance Program (NFIP) until superseded by a Flood Insurance Study and a Flood Insurance Rate Map.

25)"FLOOD INSURANCE STUDY" - A technical engineering examination, evaluation, and determination of the local flood hazard areas. It provides maps designating those areas affected by the regional flood and provides both flood insurance rate zones and base flood elevations and may provide floodway lines. The flood hazard areas are designated as numbered and unnumbered A-Zones. Flood Insurance Rate Maps, that accompany the Flood Insurance Study, form the basis for both the regulatory and the insurance aspects of the National Flood Insurance Program.

26)"FLOODPLAIN" - Land which has been or may be covered by flood water during the regional flood. It includes the floodway and the floodfringe, and may include other designated floodplain areas for regulatory purposes.

27)"FLOODPLAIN ISLAND" - A natural geologic land formation within the floodplain that is surrounded, but not covered, by floodwater during the regional flood.

28)"FLOODPLAIN MANAGEMENT" - Policy and procedures to insure wise use of floodplains, including mapping and engineering, mitigation, education, and administration and enforcement of floodplain regulations.

29)"FLOOD PROFILE" - A graph or a longitudinal profile line showing the relationship of the water surface elevation of a flood event to locations of land surface elevations along a stream or river.

30)"FLOODPROOFING" - Any combination of structural provisions, changes or adjustments to properties and structures, water and sanitary facilities and contents of buildings subject to flooding, for the purpose of reducing or eliminating flood damage.

31)"FLOOD PROTECTION ELEVATION" - An elevation of two feet of freeboard above the water surface profile elevation designated for the regional flood. (Also see: FREEBOARD.)

32)"FLOOD STORAGE" - Those floodplain areas where storage of floodwaters has been taken into account during analysis in reducing the regional flood discharge.

33)"FLOODWAY" - The channel of a river or stream and those portions of the floodplain adjoining the channel required to carry the regional flood discharge.

34)"FREEBOARD" - A safety factor expressed in terms of a specified number of feet above a calculated flood level. Freeboard compensates for many factors that cause flood heights greater than those calculated, including ice jams, debris accumulation, wave action, obstruction of bridge openings and floodways, the effects of watershed urbanization, loss of flood storage areas due to development and aggradation of the river or stream bed.

35)"HABITABLE BUILDINGS STRUCTURE" - Any ~~building structure~~ or portion thereof used or designed for human habitation.

NOTE: Structure is the term commonly used in this ordinance and in NR 116.

36)"HEARING NOTICE" - Publication or posting satisfying the requirements of Ch. 985, Stats. For appeals, a Class 1 notice, published once at least one week (7 days) before the hearing, is required. For all zoning ordinances and amendments, a Class 2 notice, published twice, once each week consecutively, the last at least a week (7 days) before the hearing. Local ordinances or bylaws may require additional notice, exceeding these minimums.

37)"HIGH FLOOD DAMAGE POTENTIAL" - Damage that could result from flooding that includes any danger to life or health or any

significant economic loss to a structure or building and its contents.

38)"HISTORIC STRUCTURE" - Any structure that is either:

- ✓ Listed individually in the National Register of Historic Places or preliminarily determined by the Secretary of the Interior as meeting the requirements for individual listing on the National Register,
- ✓ Certified or preliminarily determined by the Secretary of the Interior as contributing to the historical significance of a registered historic district or a district preliminarily determined by the Secretary to qualify as a registered historic district,
- ✓ Individually listed on a state inventory of historic places in states with historic preservation programs which have been approved by the Secretary of the Interior, or
- ✓ Individually listed on a local inventory of historic places in communities with historic preservation programs that have been certified either by an approved state program, as determined by the Secretary of the Interior; or by the Secretary of the Interior in states without approved programs.

9) "INCREASE IN REGIONAL FLOOD HEIGHT" - A calculated upward rise in the regional flood elevation, equal to or greater than 0.01 foot, based on a comparison of existing conditions and proposed conditions which is directly attributable to development in the floodplain but not attributable to manipulation of mathematical variables such as roughness factors, expansion and contraction coefficients and discharge.

10) "LAND USE" - Any nonstructural use made of unimproved or improved real estate. (Also see DEVELOPMENT.)

39) MANUFACTURED HOME" - A structure transportable in one or more sections, which is built on a permanent chassis and is designed to be used with or without a permanent foundation when connected to required utilities.. The term "manufactured home" does not include a "mobile recreational vehicle."

NOTE: The "term mobile home is no longer used within state or federal regulations. A separate definition for mobile recreational vehicles has been added below.

Deleted: "MOBILE HOME OR

Deleted: This def

40) "MOBILE RECREATIONAL VEHICLE" - A vehicle which is built on a single chassis, 400 square feet or less when measured at the largest horizontal projection, designed to be self-propelled, carried or permanently towable by a licensed, light-duty vehicle, is licensed for highway use if registration is required and is designed primarily not for use as a permanent dwelling, but as temporary living quarters for recreational, camping, travel or seasonal use. Manufactured homes that are towed or carried onto a parcel of land, but do not remain capable of being towed or carried, including park model homes, do not fall within the definition of "mobile recreational vehicle."

NOTE: This combines elements of the definitions found in NR 116 and in the federal codes.

41) "MUNICIPALITY" or "MUNICIPAL" - The county, city or village governmental units enacting, administering and enforcing this zoning ordinance.

42) "NGVD" or "NATIONAL GEODETIC VERTICAL DATUM" - Elevations referenced to mean sea level datum, 1929 adjustment.

43) "NEW CONSTRUCTION" - For floodplain management purposes, "new construction" means structures for which the start of construction commenced on or after the effective date of floodplain zoning regulations adopted by this community and includes any subsequent improvements to such structures. For the purpose of determining flood insurance rates, it includes any structures for which the "start of construction" commenced on or after the effective date of an initial FIRM or after December 31, 1974, whichever is later, and includes any subsequent improvements to such structures.

NOTE: Definition from federal code added.

44) "NONCONFORMING STRUCTURE" - An existing lawful structure or building which is not in conformity with the provisions of this ordinance for the area of the floodplain which it occupies. (For example, the use of an existing residential structure in the floodfringe district is a conforming use. However, if the lowest floor is lower than the flood protection elevation, the structure is nonconforming.)

45) "NONCONFORMING USE" - An existing lawful use or accessory use of a structure or building which is not in conformity with the provisions of this ordinance for the area of the

floodplain which it occupies. (Such as a residence in the floodway.)

46) "OBSTRUCTION TO FLOW" - Any development which blocks the conveyance of floodwaters such that this development alone or together with any future development will cause an increase in regional flood height.

47) "OFFICIAL FLOODPLAIN ZONING MAP" - That map, adopted and made part of this ordinance, as described in s. 1.5(2), which has been approved by the Department and FEMA.

48) "OPEN SPACE USE" - Those uses having a relatively low flood damage potential and not involving structures.

49) "ORDINARY HIGHWATER MARK" - The point on the bank or shore up to which the presence and action of surface water is so continuous as to leave a distinctive mark such as by erosion, destruction or prevention of terrestrial vegetation, predominance of aquatic vegetation, or other easily recognized characteristic.

50) "PERSON" - An individual, or group of individuals, corporation, partnership, association, municipality or state agency.

51) "PRIVATE SEWAGE SYSTEM" - A sewage treatment and disposal system serving one structure with a septic tank and soil absorption field located on the same parcel as the structure. It also means an alternative sewage system approved by the Department of Commerce, including a substitute for the septic tank or soil absorption field, a holding tank, a system serving more than one structure or a system located on a different parcel than the structure.

52) "PUBLIC UTILITIES" - Those utilities using underground or overhead transmission lines such as electric, telephone and telegraph, and distribution and collection systems such as water, sanitary sewer and storm sewer.

53) "REASONABLY SAFE FROM FLOODING" - NOTE: Definition from federal code added.
Means base flood waters will not inundate the land or damage structures to be removed from the special flood hazard area and that any subsurface waters

related to the base flood will not damage existing or proposed buildings.

54) "REGIONAL FLOOD" - A flood determined to be representative of large floods known to have occurred in Wisconsin or which may be expected to occur on a particular lake, river or stream once in every 100 years. A regional flood is a flood with a one percent chance of being equaled or exceeded in any given year, and if depicted on the FIRM, the RFE is equivalent to the BFE.

NOTE: Revised for clarity and to emphasize the relationship between "RFE" and "BFE."

55) "START OF CONSTRUCTION" - The date the building permit was issued, provided the actual start of construction, repair, reconstruction, rehabilitation, addition, placement, or other improvement was within 180 days of the permit date. The actual start means either the first placement of permanent construction on a site, such as the pouring of slab or footings, the installation of piles, the construction of columns, or any work beyond initial excavation, or the placement of a manufactured home on a foundation. Permanent construction does not include land preparation, such as clearing, grading and filling, nor does it include the installation of streets and/or walkways, nor does it include excavation for a basement, footings, piers or foundations or the erection of temporary forms, nor does it include the installation on the property of accessory buildings, such as garages or sheds not occupied as dwelling units or not part of the main structure. For an alteration, the actual start of construction means the first alteration of any wall, ceiling, floor or other structural part of a building, whether or not that alteration affects the external dimensions of the building.

NOTE: Definition from federal code added.

56) "STRUCTURE" - Any manmade object with form, shape and utility, either permanently or temporarily attached to, placed upon or set into the ground, stream bed or lake bed, including, but not limited to, roofed and walled buildings, gas or liquid storage tanks, bridges, dams and culverts.

57) "SUBDIVISION" - Has the meaning given in s. 236.02(12), Wis. Stats.

57) "SUBSTANTIAL DAMAGE" - Damage of any origin sustained by a structure, whereby the cost of restoring the structure to its pre-damaged condition would equal or exceed 50 percent of the equalized

NOTE: Definition from NR 116 as used for administration of nonconforming regulations.

assessed value of the structure before the damage occurred.

58) "SUBSTANTIAL IMPROVEMENT"

~~Any structural repair, reconstruction, or improvement of a structure, the cost of which equals or exceeds fifty percent (50%) of the present equalized assessed value of the structure either before the improvement or repair is started, or if the structure has been damaged, and is being restored, before the damage occurred. The term does not, however, include either:~~

~~(a) Any project for improvement of a structure to comply with existing state or local health, sanitary, or safety code specifications which existed before the improvement began, was identified by a municipal official and are necessary to assure safe living conditions;~~

~~(b) Any alteration of a designated historical structure or site documented as deserving preservation by the Wisconsin State Historical Society, or listed on the National Register of Historic Places provided the alteration will not preclude the structure's continued designation as an historical structure~~

~~Ordinary maintenance repairs are not structural repairs, modifications or additions. Such repairs include painting, decorating, paneling, and the replacement of doors, windows, and other nonstructural components. "Substantial improvement" begins when the first alteration of any wall, ceiling, floor, or other structural part of the building commences, whether or not that alteration affects the external dimensions of the structure.~~

58) "UNNECESSARY HARDSHIP" - Where special conditions affecting a particular property, which were not self-created, have made strict conformity with restrictions governing areas, setbacks, frontage, height or density unnecessarily burdensome or unreasonable in light of the purposes of the ordinance.

59) "VARIANCE" - An authorization by the board of adjustment or appeals for the construction or maintenance of a building or structure in a manner which is inconsistent with dimensional standards (not uses) contained in the floodplain zoning

NOTE: Substantial damage definition substitutes for this definition and has the same force and effect.

ordinance.

60) "VIOLATION" - The failure of a structure or other development to be fully compliant with the floodplain zoning ordinance. A structure or other development without required permits, lowest floor elevation documentation, floodproofing certificates or required floodway encroachment calculations is presumed to be in violation until such time as that documentation is provided.

NOTE: Definition from federal code added.

61) "WATERSHED" - The entire region contributing runoff or surface water to a watercourse or body of water.

62) "WATER SURFACE PROFILE" - A graphical representation showing the elevation of the water surface of a watercourse for each position along a reach of river or stream at a certain flood flow. A water surface profile of the regional flood is used in regulating floodplain areas.

63) "WELL" – means an excavation or opening in the ground made by digging, boring, drilling, driving or other methods, to obtain groundwater regardless of its intended use.



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